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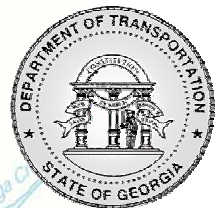
Chickamauga and Chattanooga

National Military Park

Traffic Impact Study & Subarea Transportation Plan

Task 5 - Technical Memorandum Evaluation of Improvement Strategies

Prepared for



**Georgia Department of Transportation
and National Park Service**

Prepared by

DWA
Day Wilburn Associates, Inc.

In association with



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Chickamauga and Chattanooga National Military Park Traffic Impact Study and Subarea Transportation Plan



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1 Introduction

This memorandum summarizes the methodology behind the identification and evaluation of improvement strategies conducted during Task 5 for the Chickamauga and Chattanooga National Military Park Traffic Impact Study and Subarea Transportation Plan. This memorandum is a working document and is technical in nature. It builds on the work conducted under the prior tasks: data collection, analysis, and identification of issues and needs.

Though this memorandum discusses Task 5 activities, evaluation continues and the study process is ongoing. Accordingly, any new information, additional analysis, or input is fed back into the process and considered. As the study has progressed, public involvement and stakeholder participation opportunities have been formally integrated at the key milestones in the study. Feedback from stakeholders and the public has been fully considered in the identification of issues, needs and improvement strategies for the Traffic Impact area surrounding the Battlefield and the Battlefield itself. Even though this memorandum is itself a milestone, until the final report is issued, it should be considered a work-in-progress.

The content of this memorandum is presented in sections. In Section 2, Study Methodology, the framework for identifying improvement strategies for the Traffic Impact Study area and Battlefield Subarea is described. In Section 3, Traffic Impact Study Strategies, and Section 4, Subarea Transportation Plan Strategies, impacts of the proposed improvement strategies are discussed. Finally, in Section 5, Summary and Next Steps, the improvement strategies for plan inclusion are presented.



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2 Study Methodology

The methodology for identifying improvement strategies has followed a logical study sequence. During the first study phase, study goals and objectives were developed, and data was collected and analyzed. During the next phase, study area issues and needs were developed through qualitative and quantitative assessment. During the current phase (Task 5), strategies were identified to address issues and needs.

This section presents an overview of the considerations leading to the development of the proposed improvement strategies. This includes a brief outline of the study goals and objectives. The project's context for both study areas is presented. The identified needs and issues, more fully discussed in the prior memorandum for Task 2, are summarized. The evaluation process and evaluation measurements used to perform an initial screen on the proposed strategies are also presented.

Study Goals and Objectives

To help guide study development, goals and objectives for the Traffic Impact Study area and the Battlefield Subarea were developed in conjunction with the Project Coordinating Committee (PCC), the Stakeholder Participation Panel (SPP), and the public. Table 2.1 summarizes the goals and objectives for each study area. Development of the proposed improvement strategies considered the study's goals and objectives. The evaluation of strategy impacts also reflects the study goals and objectives.

Project Context for Strategy Evaluation

To fully understand the strategy development and evaluation process, the study should be viewed within the project's context. Though the study addresses two separate areas, the larger Traffic Impact Study area and the Battlefield Subarea, these components are intertwined and interdependent. Actions taken in one area generally impact the other and vice versa.

Major considerations with the study area include:

- Expanding Chattanooga urbanized area boundaries into Fort Oglethorpe and the Chickamauga Battlefield
- Fort Oglethorpe economic changes since the US 27 relocation was open to traffic
- Current and future local and regional mobility
- Chickamauga Battlefield Unit of the Chickamauga and Chattanooga National Military Park resources
- Chickamauga Battlefield gateway resources



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Table 2.1
Study Goals, Objectives, and Performance Measures

	Traffic Impact Study		Battlefield Subarea
Goals	<ul style="list-style-type: none"> • Ensure that the transportation system meets the mobility needs of the community and region. 	<ul style="list-style-type: none"> • Increase the attraction of the US 27 relocation for commuters (motorists not destined to the Park). 	<ul style="list-style-type: none"> • Minimize adverse impacts of traffic and transportation usage on the Chickamauga Battlefield Unit of the Chickamauga and Chattanooga National Military Park and its resources. • Develop feasible transportation strategies that will respond to anticipated future growth in the area and in the Park.
Objectives	<ul style="list-style-type: none"> • Provide a safe transportation system. • Promote the development of alternative modes and connections between modes. • Improve north-south connectivity east of Park. 	<ul style="list-style-type: none"> • Ensure that Non-Park traffic uses other alternatives. • Ensure that community transportation system accommodates existing/future needs and provides easy access to US 27 Relocation. 	<ul style="list-style-type: none"> • Reduce Non-Park traffic on Park roads. • Provide adequate and safe transportation facilities for Park users. • Provide an exceptional visitor experience. • Identify transportation alternatives that reflect Park's unique needs and preserve its historic resources. • Identify land use development strategies that complement and protect the Park.
Performance Measures	<ul style="list-style-type: none"> • Traffic volumes • Level of service • Accident rates 	<ul style="list-style-type: none"> • Traffic volumes • Level of service • Percent split (percent of local and through traffic) 	<ul style="list-style-type: none"> • Traffic volumes • Number of tourists • Economic value/tourism • Feasible implementation recommendations • Percent split (percent local and through traffic) • Accident rates • Level of service • Parking utilization • Visitor feedback



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Expanding Chattanooga urbanized area boundaries

The area surrounding the Chickamauga Battlefield has changed dramatically in the level of development intensity over the past few decades. Population and employment growth in the area sets the context for the Traffic Impact Study effort. Between 1980 and 2000, over 20,000 people moved into Catoosa and Walker Counties. Accordingly, the 2000 Chattanooga urbanized area boundary continued to expand southward into the Traffic Impact Study area in Walker and Catoosa Counties, such that the urbanized boundary follows the western border of the Battlefield in Walker and as far south as Alexander's Bridge Road on the eastern border of the Battlefield. In the Catoosa County portion of the study area, the greatest population growth has occurred immediately north of the Chickamauga Battlefield adjacent to SR 2/Battlefield Parkway and US 27/SR 1. In the Walker County portion of the study area, the greatest population growth has occurred to the north and northwest of the Chickamauga Battlefield. The growth in the study area has put greater demands on the transportation network.

Fort Oglethorpe economic changes

The City of Fort Oglethorpe has undergone changes in development and business patterns. Since the improvement of SR 2/Battlefield Parkway, business development has shifted away from the north-south oriented LaFayette Road business district to the east-west oriented SR 2 business district. The shape of Fort Oglethorpe has also changed as it has continued to annex land eastward along SR 2. One indicator of these changes includes the development of Fort Oglethorpe's City Hall Complex off SR 2/Battlefield Parkway with no direct street connection to the historic Fort Oglethorpe business district on LaFayette Road.

Local and regional mobility

Maintaining local and regional mobility is one of the goals of this study. As population has increased in the study area, traffic on local roads has also increased. Understanding area travel patterns and the roadway network system's capacity to accommodate trips now and into the future is essential to develop meaningful improvement strategies. Besides an increasing production of local trips in and around Fort Oglethorpe, Rossville and the City of Chickamauga, there is a major commute travel pattern between the study area and the greater Chattanooga area. One of the context issues for the Traffic Impact Study area is that it has become a bedroom community for the greater Chattanooga area, and there has been an increase in the number of residents commuting out of the study area for employment.

The refined Chattanooga travel demand model developed for this study was used to help identify areas that would likely experience traffic volume growth and congestion in the future (2025). The 2025 Long Range Transportation Plan (LRTP) Model provided the basis for the no-build model against which capacity-adding strategies were evaluated. Volume-to-capacity ratios (v/c) were developed to identify locations that would likely be congested in the future. North-south routes leading towards Chattanooga will likely experience the greatest traffic congestion and



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major east-west routes such as SR 2/Battlefield Parkway will also face traffic volume growth and congestion.

Chickamauga Battlefield Unit of the CCNMP resources

The context for the Battlefield Subarea study is anchored in history and congressional mandate. Before the Chickamauga Battlefield existed as a National Military Park, it was the site of one of the bloodiest battles of the Civil War. The Battle of Chickamauga was part of a larger military campaign, the objective of which was for the Union army to thrust southward through eastern Tennessee and capture the town of Chattanooga, a Confederate stronghold. The two-day battle took place over a twenty square mile area but much of it was focused along a portion of this road. Chickamauga Battlefield Park incorporates only the core battle area.

CCNMP Origins

The Chickamauga Battlefield was designated a National Military Park on August 19, 1890, “for the purpose of preserving and suitably marking for historical and professional military study the fields of some of the most remarkable maneuvers and most brilliant fighting” of the Civil War.”¹ The legislation was the first to authorize the preservation of an American battlefield and formed the basis of the establishment and development of a national system of military parks.

Following acquisition of a significant portion of the Chickamauga Battlefield by the Park Commission, the land was developed as a commemorative landscape. Changes to the landscape included the improvement of historic roads, the removal of the several buildings and structures located within the Park, as well as the addition of administration and maintenance buildings, new roads to enhance access, and the construction of a number of stone bridges and culverts. In addition to these infrastructure improvements, which were generally made to accommodate visitors, the Park Commission also made changes to restore the landscape to its 1863 conditions to help visitors interpret and commemorate the battle. Since 1890, the Park Commission has added approximately 1,150 commemorative monuments, memorials, markers, cannons, and tablets. Some of these monuments have been placed by individual states to honor those who fought at Chickamauga, some by members of regiments marking their location at various times of the battle, and others to honor commanding officers. Although many of these features can be seen from Park roads, others can only be viewed from pedestrian paths and trails.

CCNMP Purpose

The primary Chickamauga and Chattanooga National Military Park purpose “is to preserve the significant resources of the Civil War campaigns and battles of Chickamauga and Chattanooga and to educate the public about the events memorialized.”²

¹ B. Morris, et al, *Cultural Landscape Inventory, Chickamauga and Chattanooga National Military Park* (Atlanta: National Park Service, Southeast Regional Office, October 1997), p. 2.

² Chickamauga and Chattanooga National Military Park, Management Objectives Workshop, August 9 and 10, 1994, p. 6.



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Park management objectives particularly important to this study are those related to visitor experience and roads and transportation. The two visitor experience management objectives are:

To provide a non-distracting, contemplative environment in order to enhance the visitors' educational and emotional experience.

To develop the visitors' appreciation of the sacrifices of the soldiers in the battles and campaigns.

An additional objective regarding roads and transportation is:

To provide a park road and transportation system that assures access to park resources, and at Chickamauga Battlefield is consistent with the historic character of the roads.³

Though the Chickamauga Battlefield's roads remain open to the public, the roads are under the ownership of the NPS. Non-Park destined traffic can conflict with Park management objectives, particularly when through-traffic interferes with visitor experience objectives. Through the data collected and analyzed for this study (license tag origin and destination survey and roadside interview survey), it was determined that on average, over 80 percent of traffic currently on Park roads are destined for non-Park locations. So, a significant portion of existing traffic volume is generated by other than Park visitors.

Chickamauga Battlefield gateway resources

Cultural, historic, and natural features abound in the Traffic Impact Study area immediately outside the Chickamauga Battlefield. According to the *Chattanooga Area Civil War Sites Assessment*, six major sites related to the Civil War are located within the Battlefield's gateway corridors, including along McFarland Gap Road, LaFayette Road, Reed's Bridge Road, Alexander's Bridge Road, Lee and Gordon's Mill (off south LaFayette Road), and Lytle Road. The historic Fort Oglethorpe, immediately north of the Battlefield and west of LaFayette Road, is listed in the National Register of Historic Districts, and Lee and Gordon's Mill is a National Register Historic Site. The West Chickamauga Creek sub-basin encompasses much of the eastern half of the Battlefield and lands immediately east of the Battlefield's boundary. Impacts to the cultural, historic, and natural features must be considered within the framework of this study.

Overall, a balance must be achieved between the various elements in the study area to attain a package of recommendations that has substantial benefits for both study area components.

³ Ibid., pp. 8 - 9.



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Identified Issues and Needs

Through qualitative and quantitative analysis, study area issues and needs were identified.⁴ The issues and needs were grouped into four major themes:

- North-south mobility and connectivity to Chattanooga
- East-west mobility and mobility within Ft. Oglethorpe
- Gateway linkages between the Chickamauga Battlefield and surrounding area
- Battlefield Subarea issues and needs

North-south mobility and connectivity to Chattanooga

As indicated in the introduction, a major consideration within the study area's context is north-south mobility for residents making local trips and also commuting to Chattanooga. The US 27 relocation to the western side of the Chickamauga Battlefield provided a higher classification roadway and greater mobility for north-south trips originating west and south of the Battlefield. Though the distance to travel on the US 27 relocation versus LaFayette Road (between the south and north junctions of US 27 relocation/LaFayette Road) is slightly greater, it takes less time to travel on the US 27 relocation. The divided, four-lane US 27 relocation provides much greater capacity than the former two-lane LaFayette Road/US 27 through the Battlefield.

For local mobility, the primary issue related to the US 27 relocation as indicated by stakeholders was safe access between the relocation and intersecting roads. Other north-south concerns included providing better movement east of the Battlefield, and experiencing higher vehicular crash rates on Burning Bush Road.

For Chattanooga-bound traffic, improving through-movement at SR 2/Battlefield Parkway, US 27 and LaFayette Road intersection is an issue now and into the future. The 2025 Chattanooga LRTP network model was used to help identify future congestion issues. The model indicated future congestion on LaFayette Road from Battlefield Parkway north to 37th Avenue, Schmidt Road/Dewberry Road/Hogan Road from McFarland Gap Road to Chickamauga Avenue, Fant Drive from SR2/Battlefield Parkway to SR 146/Cloud Springs Road, and Three Notch Road from Battlefield Parkway to US 41.

East-west mobility and mobility within Fort Oglethorpe

Needs related to mobility within Fort Oglethorpe and overall east-west mobility were identified. One concern for study area residents and to the local business community is access to historic Fort Oglethorpe and to the business district on LaFayette Road from the US 27 relocation. The relocation of US 27 improved overall mobility for the study area, but travel patterns were impacted by the relocation such that traffic volumes through Fort Oglethorpe's LaFayette Road

⁴ See *Chickamauga and Chattanooga National Military Park: Traffic Impact Study and Subarea Transportation Plan, Task 2 - Technical Memorandum, December 2003*.



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business district have declined by half. On the other hand, there has been active commercial development along SR 2/Battlefield Parkway.

SR 2/Battlefield Parkway is the primary east-west arterial in the study area. It links Fort Oglethorpe to I-75. Much of the recent development in Catoosa County and Fort Oglethorpe has occurred on Battlefield Parkway. Maintaining mobility on Battlefield Parkway is critical for the local area. As such, the 2025 Chattanooga LRTP network model indicated future congestion on Battlefield Parkway from Cedar Lane to east of I-75. Another east-west arterial with identified needs is SR 146/Cloud Springs Road which also appears to have a higher than expected crash rate.

Gateway linkages between Chickamauga Battlefield and surrounding area

Connections between the historic, cultural, and natural resources that are shared by the Battlefield and surrounding communities have not been fully developed. A desire exists to make better connections through enhancing visitor amenities, improved interpretation facilities, and multimodal transportation infrastructure. Exploring potential gateway strategies that invite regional, cultural and educational interests is important to merging community and NPS objectives.

Battlefield Subarea identified issues and needs

A variety of issues and needs were identified within the Battlefield Subarea. Overall, a fundamental conflict exists between the desire for Park visitors to interpret and enjoy the Chickamauga Battlefield and the excessive traffic and noise generated by non-Park traffic. Roads in the Battlefield are owned by the National Park Service (NPS). To better understand the nature of the roads within the context of the Park's management objectives, a sensitivity rating was developed with input from the NPS in the cultural assessment during Task 2. Two-thirds of Battlefield Park roads were found to be very sensitive, based on this assessment which valued their historic and cultural nature.

Other needs cited within the Battlefield Subarea included a desire for more facilities for non-vehicular Park users such as more and improved bike trails and multi-use trails, additional access control of roadways within the Park, and improving the poor condition of Park roads.

Evaluation Process

Once issues and needs were identified, improvement strategies were developed. Thirty-five improvement strategies were proposed. A planning-level screening analysis was evaluated for impacts against 15 different criteria. Each strategy's impact on both the Traffic Impact Study area and Battlefield Subarea was considered. To provide a visual summary of the impacts, a comparative evaluation matrix was developed. The matrix listed each of the strategies grouped into four different categories: north-south mobility, east-west mobility, gateway linkages, and Battlefield Subarea. To summarize the impacts for each criteria, the matrix used symbols



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representing positive, negative, no impact or not applicable for each criteria. This was not a scoring exercise, rather a planning-level determination of whether the impacts for any given criteria were primarily positive or negative, or whether there were no impacts.

Evaluation Measurements

Fifteen evaluation criteria were used to assess the strategies, eight for the Traffic Impact Study area and seven for the Battlefield Subarea. The evaluation criteria are summarized here.

Traffic Impact Study Area Evaluation Criteria

Capacity - Vehicular through trips indicated by volume to capacity (v/c). Existing conditions were examined using current traffic volume data and the base 2003 refined Chattanooga travel demand model. The no-build future condition was evaluated using the refined 2025 LRTP Chattanooga travel demand model. Facilities are considered congested when the v/c exceeds 1.0 though facilities approaching 1.0 are generally considered congested as well.

Operations - Ease of travel including travel time and delay at critical intersections. Intersection level-of-service analysis was conducted at key intersections in the study area. In addition, key intersections and roadways were evaluated through field review where needs and issues were identified.

Safety - Normalized crash rates compared against the statewide average for each roadway type. 2001 GDOT crash data were reviewed. Crash rates were calculated to determine locations where safety issues exist.

Wayfinding - Readability, location and frequency of signage to capture roadway user attention in predominant travel patterns. Existing signage in the study area was assessed through field review.

Cost - An estimate of order-of-magnitude cost relative to other proposed strategies. During this phase of the study, only approximate costs based on planning judgment were utilized.

Economic Impact - Potential implications for economic activity within the community. This was based on planning judgment.

Environmental Justice - Positive or negative impacts on areas where there are concentrations of low-income (below the poverty level) and/or non-white persons and accessibility and implications for those areas. Mapped strategies were screened against identified locations of populations of low-income and non-white persons to help identify if environmental justice communities might be impacted.



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Cultural and Natural Resources - Protection, enhancement, degradation, or loss of important cultural and natural features. Proposed strategies were screened against known historic, cultural and natural resources and features in the study area.

Battlefield Subarea Evaluation Criteria

Capacity - Vehicle through trips, volume-to-capacity within the context of Park setting road functional classification. Capacity on Park roads differs from established capacity standards used for state and local roads. Capacity of the Park roads was lowered to reflect the Park context.

Operations - Ability to serve needs of various travel modes within context determined by Park setting and Park road functional classification. Intersection analysis and field review was conducted to assess traffic operations needs within the Battlefield.

Safety – Number of crashes occurring within the Park and roadway characteristics consistent with Park setting roads functional classification. Crash rates were calculated for major Park roads.

Wayfinding - Readability, location and frequency of signage to capture Battlefield Park visitor's attention. Existing signage was assessed through field review.

Cultural and Natural Resources - Protection, enhancement, degradation, or loss of important cultural and natural features. Improvement strategies were screened against known locations of cultural and historic features in the Chickamauga Battlefield.

CCNMP Park Policies and Goals - Supports or conflicts with current and future General Management Plans and associated related policies and plans. Improvement strategies were screened against known Park policies and goals.

Visitor Experience - Enhances or detracts from the NPS desired visitor experience and associated interpretive programs and facilities.

The strategy matrix results are shown in Table 2.2. For mapping and identification purposes, each strategy was assigned a sequential identification number by category during the strategy development phase as follows:

- North-south mobility strategies are numbered I-1 through I-9
- East-west mobility strategies are numbered II-1 through II-5
- Gateway strategies are numbered III-1 through III-7
- Battlefield Subarea strategies are numbered IV-1 through IV-14



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Proposed strategies for both the Traffic Impact Area and the Battlefield Subarea are illustrated in Figures 2.1 through 2.7. The strategy matrix was presented to the PCC and SPP at a February 2, 2004 meeting for review and comment. Formal, written comment was solicited through a follow-up letter sent out to the SPP members after the meeting. Stakeholders were asked to return their written comments by February 24, 2004.

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Table 2.2 Improvement Strategies Evaluation Matrix

No.	Description	Need & Purpose or Justification	Project Focus		Traffic Impact Area Impacts								Battlefield Subarea Impacts						
			Traffic Impact Area	Battlefield Subarea	Capacity	Operations	Safety	Wayfinding	Cost	Economic Impact	Environmental Justice	Cultural/ Natural Resources	Capacity	Operations	Safety	Wayfinding	Cultural/ Natural Resources	CCNMP Park Policies/Goals	Visitor Experience
I. North-South Mobility and Connectivity to Chattanooga																			
I-1	Extension of US 27 from SR 2/Battlefield Pkwy. to SR 146/Cloud Springs Rd.	Existing and projected congestion on LaFayette Rd. north of SR 2; reduce non-Park traffic inside Battlefield	✓		+	+	+	n/a	-	○	-	-	+	+	+	n/a	n/a	+	+
I-2	Extension of US 27 from SR 2/Battlefield Pkwy. to LaFayette Rd./Chickamauga Ave.	Existing and projected congestion on LaFayette Rd. north of SR 2; reduce non-Park traffic inside Battlefield	✓		-	-	+	n/a	-	○	-	-	+	+	+	n/a	n/a	+	+
I-3	Widen LaFayette Rd./Chickamauga Ave. from SR 146 to 37th Ave. in Chattanooga (4 to 6 lanes)	Existing and projected congestion on LaFayette Rd. north of SR 2	✓		+	-	+	n/a	-	-	-	○	○	○	n/a	n/a	n/a	n/a	n/a
I-4	Intersection improvements at SR 2/Battlefield Pkwy. and LaFayette Rd.	Existing and projected congestion on LaFayette Rd. north of SR 2	✓		+	+	+	n/a	+	+	+	○	○	○	n/a	n/a	n/a	n/a	n/a
I-5	Improve intersection at US 27 and Osburn Rd.	Safety improvement	✓		○	+	+	n/a	+	○	+	○	○	○	n/a	n/a	n/a	n/a	n/a
I-6	Improve Three Notch Rd. and Red Belt Rd. to serve as eastern bypass	Improve north-south connectivity east of Park; future residential growth	✓		○	○	○	n/a	-	○	+	-	○	○	○	n/a	n/a	○	○
I-7	Construct new eastern bypass between Park boundary and Burning Bush Rd.	Improve north-south connectivity east of Park; future residential growth	✓		+	+	+	n/a	-	○	-	-	+	+	+	n/a	-	-	-
I-8	Improve shoulders and alignment on Burning Bush Rd.	Improve north-south connectivity east of Park; future residential growth	✓		+	+	+	n/a	-	+	+	-	+	+	+	n/a	n/a	○	○
I-9	Implement Demand Management program for commuters	Support formation of carpools and/or vanpools from study area to Chattanooga	✓		+	+	n/a	n/a	+	+	+	○	n/a	n/a	n/a	n/a	○	○	+
II. East-West Mobility and Mobility within Ft. Oglethorpe																			
II-1	Widen SR 2/Battlefield Pkwy. from Cedar Ln. to I-75 (4 to 6 lanes)	Projected congestion on SR 2	✓		+	+	+	n/a	-	+	-	-	+	+	+	n/a	○	n/a	+
II-2	Develop access management/corridor management plan on SR 2/Battlefield Pkwy.	Projected congestion on SR 2	✓		○	+	+	n/a	+	+	+	○	n/a	n/a	n/a	n/a	○	n/a	○
II-3	Widen McFarland Gap Rd from Mission Ridge Rd. to LaFayette Rd. (2 to 4 lanes)	Improve connectivity between US 27 relocation and Ft. Oglethorpe business district	✓	✓	+	+	-	n/a	-	+	-	-	○	○	-	n/a	-	-	-
II-4	Realign Thomas Rd. west of LaFayette Rd. and improve signage on Thomas Rd. and McFarland Gap Rd.	Improve access and wayfinding to hospital area	✓	✓	○	+	+	+	+	+	+	○	n/a	n/a	n/a	n/a	n/a	n/a	n/a
II-5	Widen SR 146/Cloud Springs Rd. from LaFayette Rd. to US 41 (2 to 4 lanes)	Improve east-west mobility	✓		+	+	+	n/a	-	+	-	○	n/a	n/a	n/a	n/a	n/a	n/a	n/a
III. Gateway Linkages between Battlefield and Surrounding Area																			
III-1	Conduct joint land use/transportation study on LaFayette Rd. corridor between Battlefield and SR 2	Support revitalization of downtown Ft. Oglethorpe	✓	✓	n/a	+	+	+	+	+	+	+	n/a	n/a	n/a	n/a	+	+	+
III-2	Make streetscape improvements on LaFayette Rd. between Battlefield and SR 2 and connect to Battlefield visitor center with multi-use path facility	Improve connection between Battlefield and surrounding community	✓	✓	n/a	+	+	+	+	+	+	+	n/a	n/a	n/a	+	+	+	+
III-3	Improve wayfinding signage to Battlefield from surrounding area	Improve connection between Battlefield and surrounding community	✓	✓	n/a	+	n/a	+	+	+	n/a	n/a	n/a	n/a	n/a	+	n/a	+	+
III-4	Develop coordinated wayfinding/signage program for historic sites outside and inside the Park	Improve connection between Battlefield and surrounding community	✓	✓	n/a	+	n/a	+	+	+	○	+	n/a	n/a	n/a	+	n/a	+	+
III-5	Consider excursion train between Chattanooga Choo-Choo site and City of Chickamauga	Improve connection between Battlefield and surrounding community	✓	✓	n/a	n/a	n/a	n/a	-	+	○	+	n/a	n/a	n/a	n/a	n/a	+	+
III-6	Develop regional auto tour	Improve connection between Battlefield and surrounding community	✓	✓	n/a	n/a	n/a	+	+	+	○	+	n/a	n/a	n/a	n/a	n/a	+	+
III-7	Connect to regional trail network	Improve connection between Battlefield and surrounding community	✓	✓	n/a	n/a	n/a	n/a	+	+	+	+	n/a	n/a	n/a	n/a	n/a	+	+

IMPACTS:	Positive	+	Negative	-	No Impact	○	Not applicable	n/a
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Chickamauga and Chattanooga National Military Park Traffic Impact Study and Subarea Transportation Plan Improvement Strategies Evaluation Matrix - February 2004



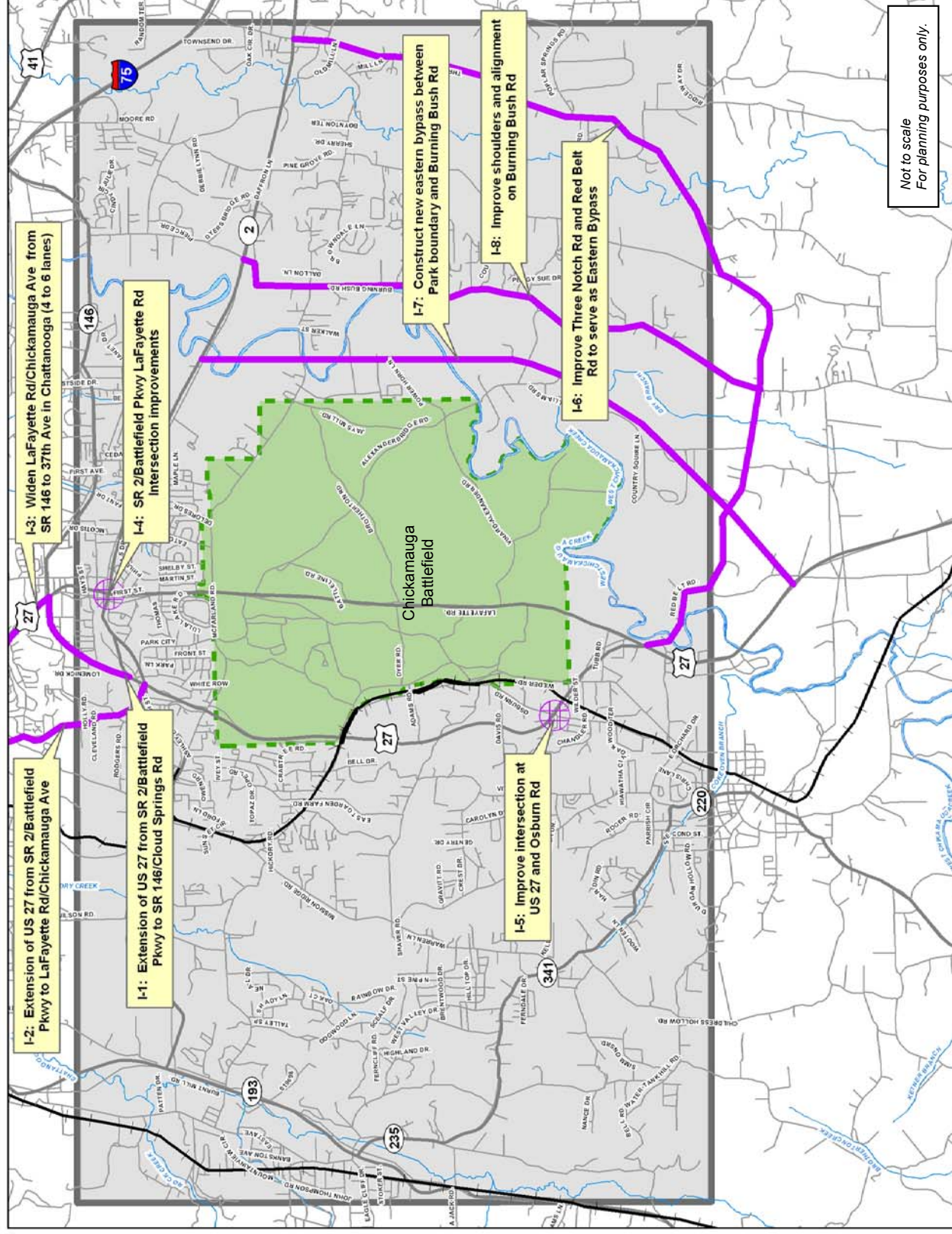
Table 2.2 Improvement Strategies Evaluation Matrix, Continued

No.	Description	Need & Purpose or Justification	Project Focus		Traffic Impact Area Impacts								Battlefield Subarea Impacts						
			Traffic Impact Area	Battlefield Subarea	Capacity	Operations	Safety	Wayfinding	Cost	Economic Impact	Environmental Justice	Cultural/ Natural Resources	Capacity	Operations	Safety	Wayfinding	Cultural/ Natural Resources	CCNMP Park Policies/Goals	Visitor Experience
IV. CCNMP Battlefield Visitor Experience/Operational Improvements																			
IV-1	Expand tour route for automobiles - Alexander Bridge Rd. to Jay's Mill Rd. to Brotherton Rd. to LaFayette Rd.	Improve interpretative experience and identification for Park users; visitor safety		✓	n/a	n/a	n/a	n/a	n/a	+	n/a	+	○	+	+	+	○	+	+
IV-2	Expand tour route for automobiles - Reed's Bridge Rd. to Jay's Mill Rd. to Brotherton Rd. to Alexander Bridge Rd.	Improve interpretative experience and identification for Park users; visitor safety		✓	n/a	n/a	n/a	n/a	n/a	+	n/a	+	○	+	+	+	○	+	+
IV-3	Circulation changes on Brotherton Rd. (one-way westbound), Viniard-Alexander Rd. (one-way eastbound), and Jay's Mill Rd. (one-way northbound)	Improve interpretative experience for Park users; visitor safety		✓	○	○	n/a	n/a	n/a	n/a	n/a	n/a	+	+	+	+	○	+	+
IV-4	Road closures at 5 Park entrance locations: Lytle Rd., Long Hollow Rd., Osburn Rd., Wilder Rd., and Jay's Mill Rd.	Maintain Park cultural resources; minimize non-Park traffic		✓	-	-	n/a	-	n/a	-	-	n/a	+	+	+	+	+	+	+
IV-5	Expand touring routes for alternative modes: bicycling, pedestrian, equestrian; include dedicated parking facilities	Improve interpretative experience for Park users; visitor safety		✓	n/a	n/a	n/a	n/a	n/a	+	n/a	n/a	+	+	+	n/a	○	+	+
IV-6	Develop Park Road Multimodal Functional Classification System that includes design speed, road character/pavement surface type, modal designation and purpose	Provide enhanced road classification standards for all Park roads and trails		✓	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	+	+	+	+	+	+	+
IV-7	Expand or enhance parking facilities and/or interpretive stations at Alexander's Bridge, Winfrey Field, Brock Field, Wilder Brigade Monument, Jay's Mill, Kelly Field, and Reed's Bridge for expanded auto tour route(s)	Improve interpretative experience for Park users		✓	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	-	+	+
IV-8	Change orientation and connection to Battlefield visitor center to McFarland Gap Rd. from LaFayette Rd.	Restore historic fields and view sheds in the battlefield landscape		✓	n/a	n/a	n/a	n/a	n/a	+	n/a	○	n/a	+	n/a	n/a	+	+	+
IV-9	New directional signage at major intersections to major historic sites within the Battlefield	Enhance wayfinding within the Park		✓	n/a	n/a	n/a	+	n/a	+	n/a	n/a	n/a	n/a	n/a	+	○	+	+
IV-10	Clarify commercial vehicle standards for Park roads	Reduce confusion; Improve interpretative experience for Park users; visitor safety		✓	n/a	n/a	n/a	n/a	n/a	○	n/a	n/a	+	+	+	n/a	+	+	+
IV-11	Lower speed limit on LaFayette Rd.	Maintain Park cultural resources, minimize non-Park traffic		✓	+	+	+	n/a	n/a	-	n/a	n/a	+	+	+	n/a	+	+	+
IV-12	Lower speed limits on McFarland Gap Rd. and Reed's Bridge Rd.	Lower road functional classification	✓	✓	+	+	+	n/a	n/a	-	n/a	n/a	+	+	+	n/a	+	+	+
IV-13	In long-term, develop alternative transportation/Park shuttle system	Improve interpretative experience for Park users; visitor safety		✓	n/a	n/a	n/a	n/a	n/a	+	n/a	+	+	+	+	n/a	+	+	+
IV-14	Increase speed limit on LaFayette Rd.	Improve north-south access; increase activity on LaFayette Rd. north of Battlefield	✓	✓	-	-	-	n/a	n/a	+	n/a	-	-	-	-	n/a	-	-	-

IMPACTS:	Positive	+	Negative	-	No Impact	○	Not applicable	n/a
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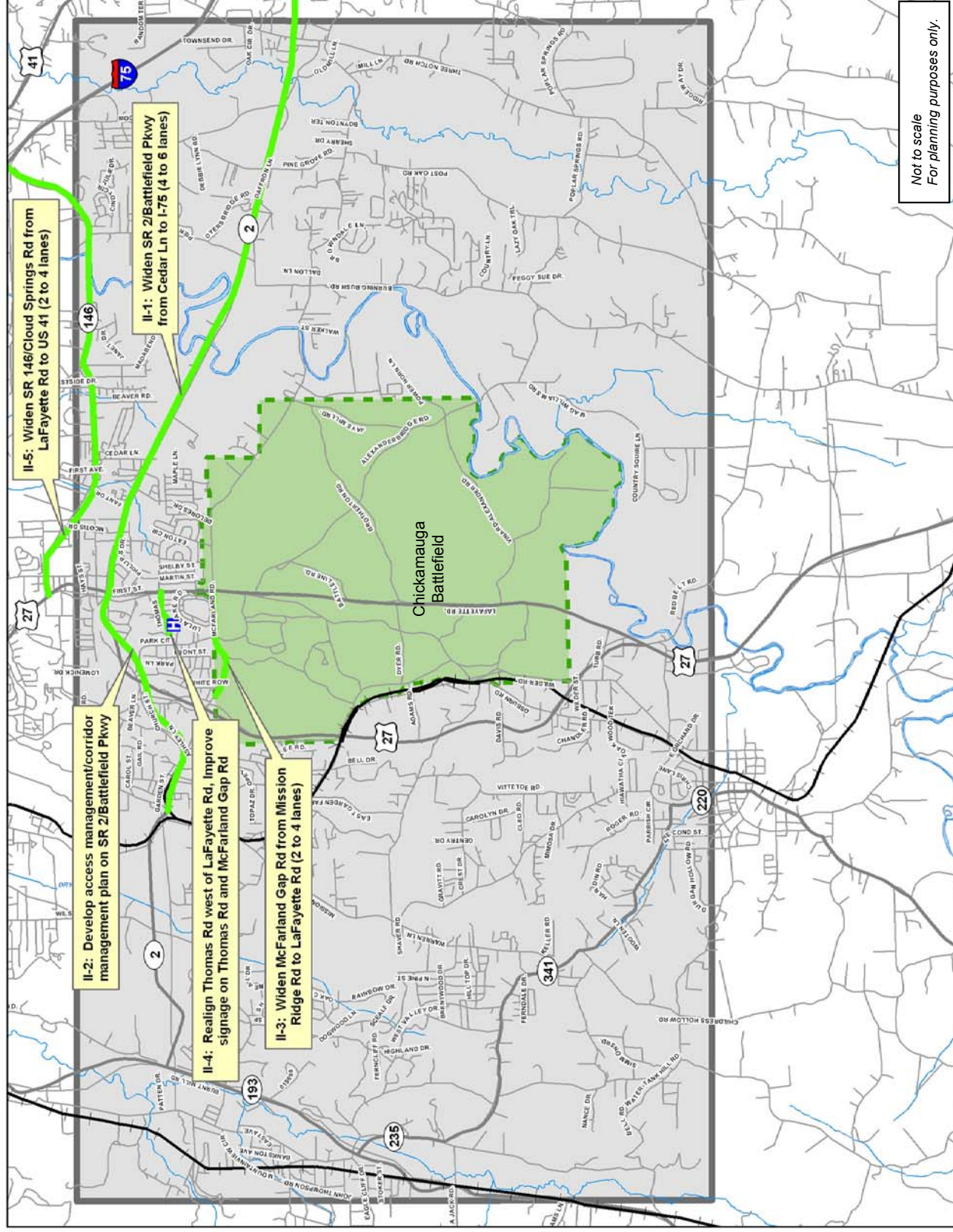
Figure 2.1 - Traffic Impact Study Area: North-South Mobility Improvement Strategies





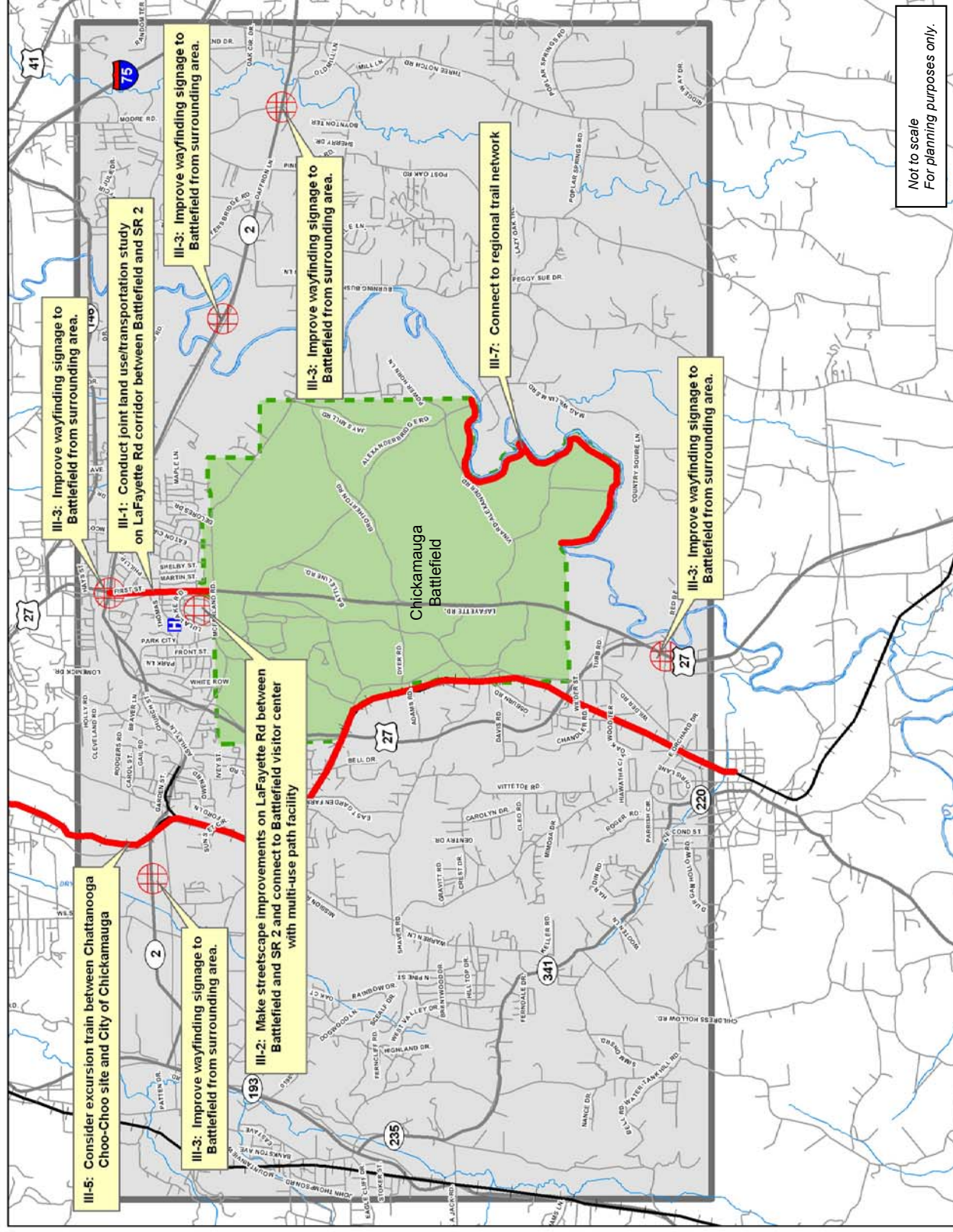
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Figure 2.2 - Traffic Impact Study Area: East-West Mobility Improvement Strategies



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Figure 2.3 - Traffic Impact Study Area: Gateway Linkage Improvement Strategies

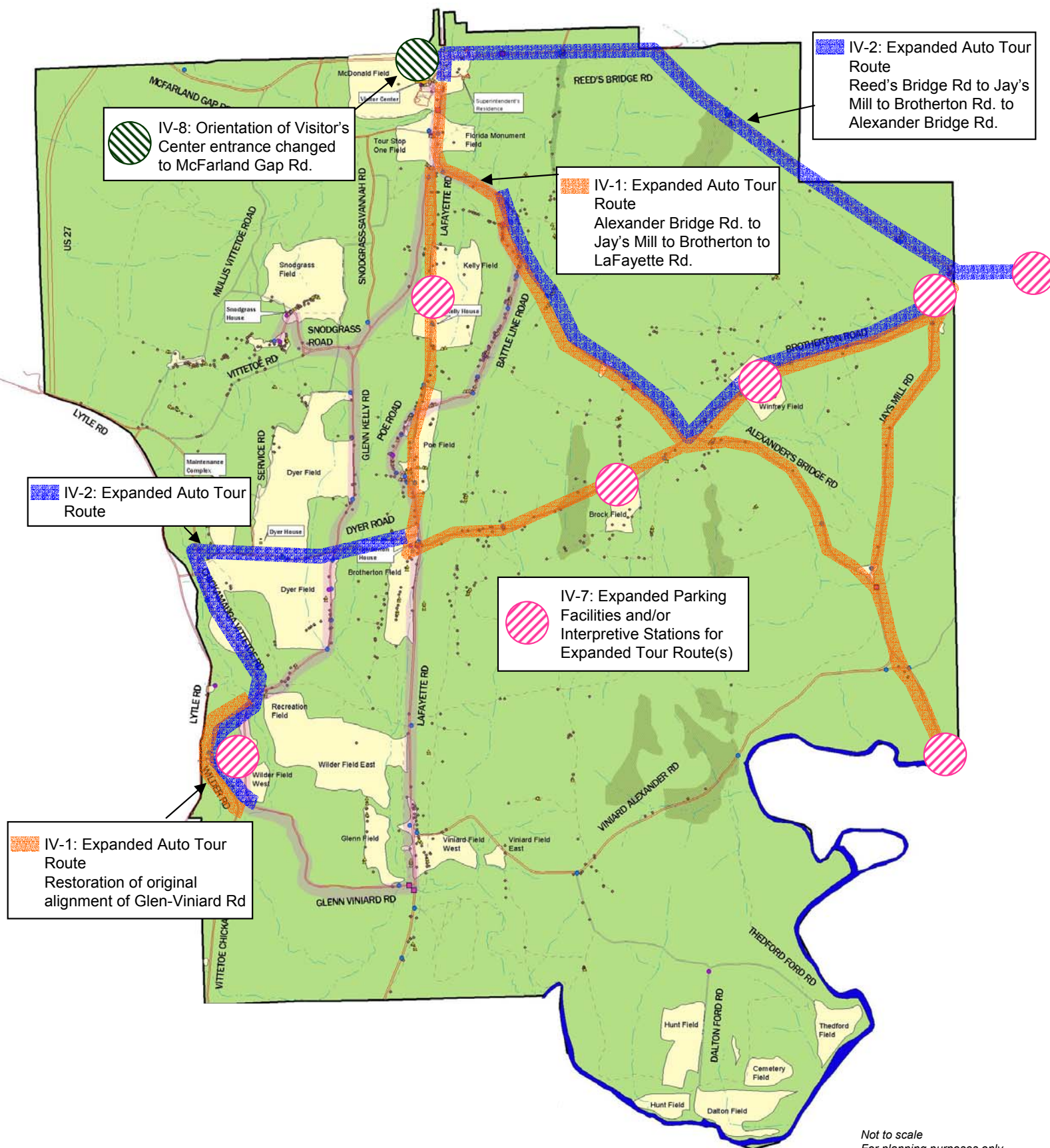




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Figure 2.4 - Battlefield Subarea: Interpretive Improvement Strategies



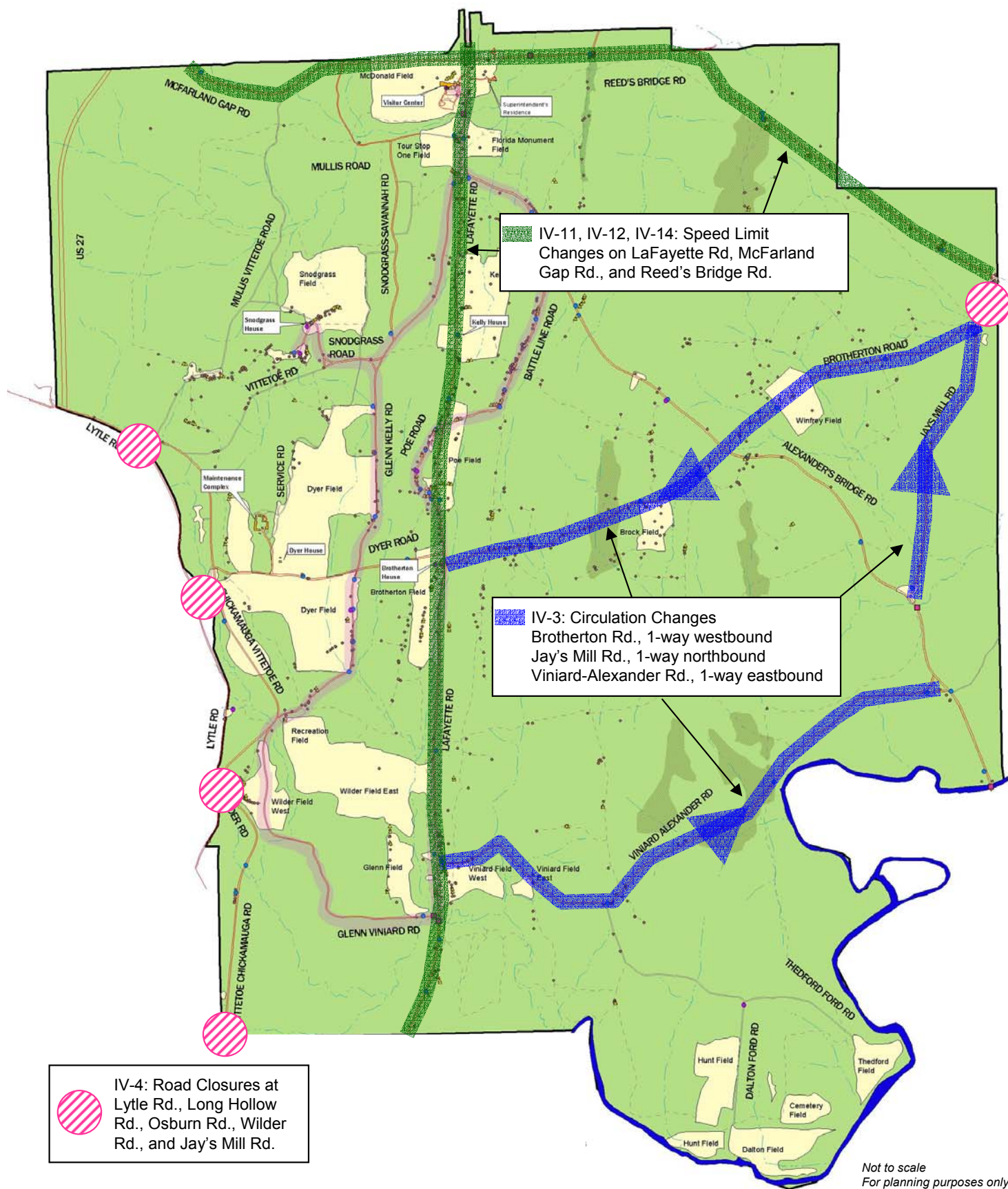
Not to scale
For planning purposes only.



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Figure 2.5 - Battlefield Subarea: Operational Improvement Strategies

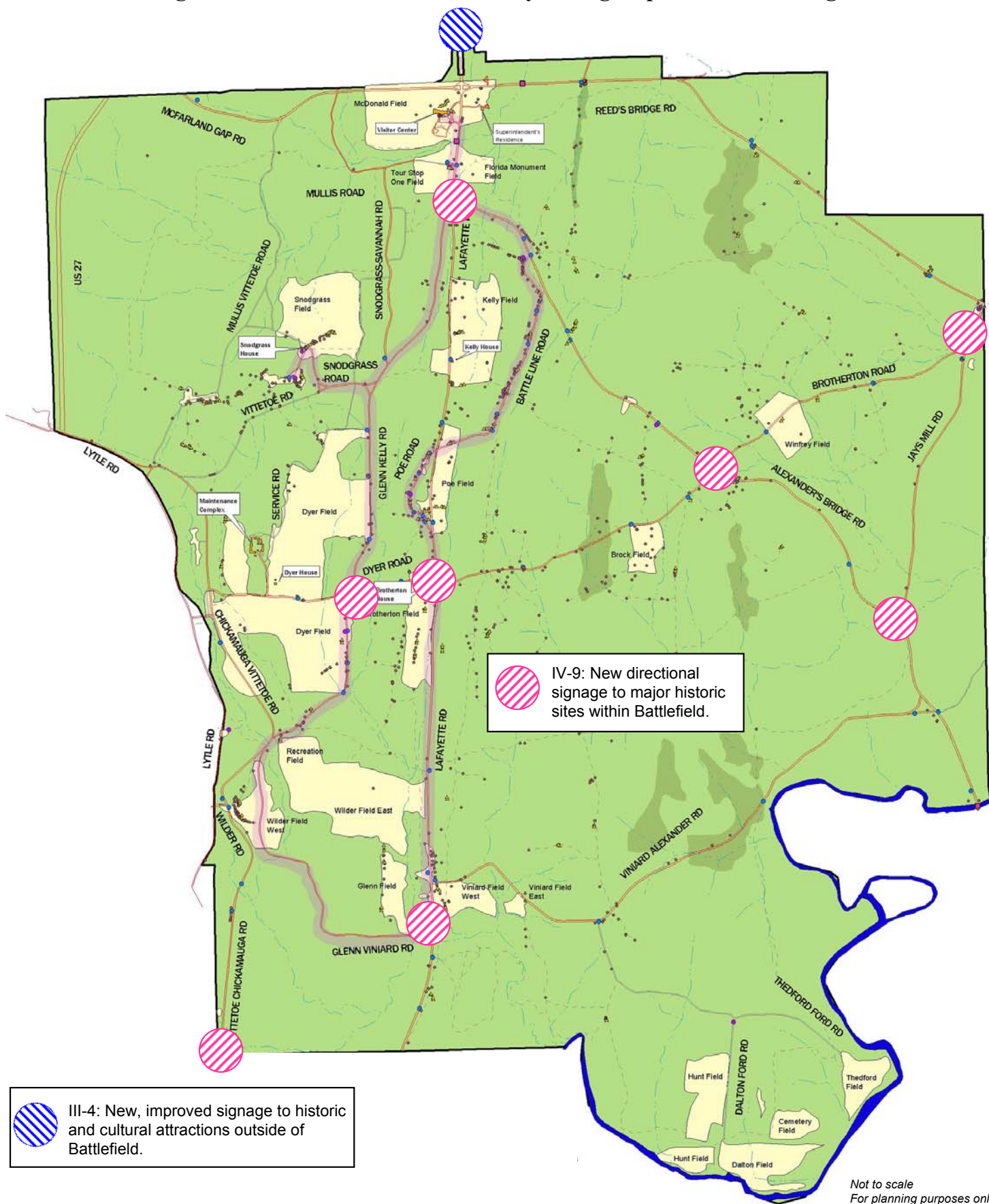




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Figure 2.6 - Battlefield Subarea: Wayfinding Improvement Strategies



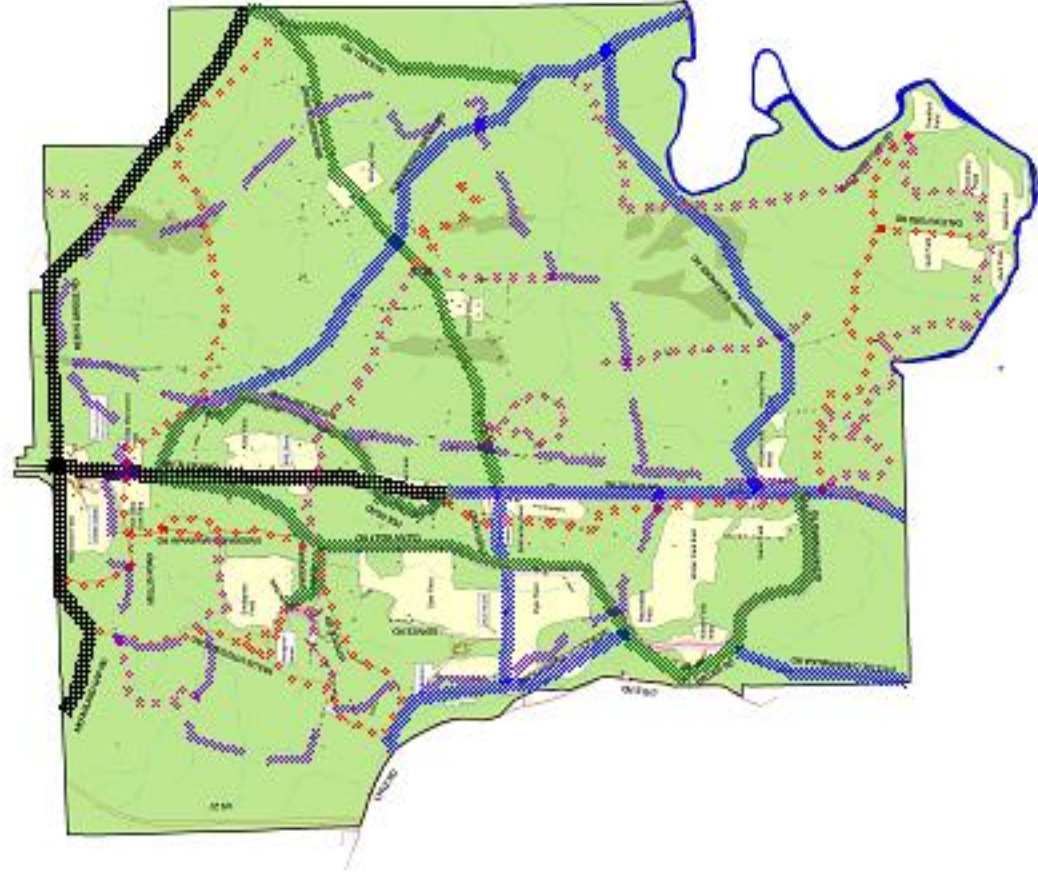
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Figure 2.7 - Battlefield Subarea: Chickamauga Battlefield Multimodal Functional Classification



Foot Trail - Class IV Primitive
 Pavement Type: Unimproved
 Modes Supported: Pedestrian
 Design Speed: Walking
 Purpose: Interpretation of historic sites and recreation

Equestrian Trail - Class IV Primitive
 Pavement Type: Unimproved
 Modes Supported: Equestrian and Pedestrian
 Design Speed: Walking to slow trot (5 to 10 mph)
 Purpose: Interpretation of historic sites and recreation

Bike/Foot Trail - Class III Special Purpose
 Pavement Type: Improved unpaved or paved
 Modes Supported: Bicycle and Pedestrian
 Design Speed: 10 - 15 mph
 Purpose: Interpretation of historic sites and recreation

Interpretive Multimodal Route - Class III Special Purpose
 Pavement Type: Paved with exposed aggregate
 Modes Supported: Automobile, Bicycle, Pedestrian
 Design Speed: 15 mph
 Purpose: Interpretation of historic sites

Connector Road - Class II
 Pavement Type: Paved with exposed aggregate
 Modes Supported: Automobile
 Design Speed: 20-25 mph
 Purpose: Travel between Park sites, interpretation of historic sites, and secondary access to Park

Principal Park Road - Class I
 Pavement Type: Concrete
 Modes Supported: Automobile
 Design Speed: 25-30 mph
 Purpose: Access to park and travel between Park sites

(Not to scale
For planning purposes only)



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3 Traffic Impact Study Strategies

Following the planning evaluation and input from the Stakeholder Participation Panel and Project Coordinating Committee, a set of strategies for plan development was established. In this section, the major impacts of each strategy are discussed. First, strategies proposed for the draft plan are presented, followed by strategies no longer under consideration. One strategy is undergoing additional evaluation and is presented at the end of this section. Maps depicting the Traffic Impact Study strategies are shown in Figures 2.1 through 2.3.

Proposed Plan Strategies

Sixteen strategies will be carried forward in the plan for the Traffic Impact Study area. For each strategy, a description, need and purpose or justification, and primary impacts are presented. For an overall picture of each of the strategy's impacts, please refer to Table 2.2, Improvement Strategies Evaluation Matrix. The strategies proposed for plan development are:

- I-1: Extension of US 27 relocation from SR 2/Battlefield Parkway to SR 146/Cloud Springs Road.
- I-4: Intersection improvements at SR 2/Battlefield Parkway and LaFayette Road.
- I-5: Improve intersection at US 27 relocation and Osburn Road by allowing safer ingress and egress to US 27 relocation.
- I-8: Improve shoulders and alignment on Burning Bush Road and provide turning lanes where warranted.
- I-9: Implement Demand Management program for commuters.
- II-1: Widen SR 2/Battlefield Parkway from Cedar Lane to I-75 from four to six lanes.
- II-2: Develop corridor management/access management plan for SR 2/Battlefield Parkway.
- II-4: Realign Thomas Road west of LaFayette Road and improve signage on Thomas Road and McFarland Gap Road.
- II-5: Widen SR 146/Cloud Springs Road from LaFayette Road to US 41 from two to four lanes.
- III-1: Conduct joint land use/transportation study on LaFayette Road corridor between the Chickamauga Battlefield and SR 2/Battlefield Parkway.
- III-2: Make streetscape improvements on LaFayette Road between the Chickamauga Battlefield and SR 2/Battlefield Parkway and connect to Battlefield visitor center with multi-use path facility.
- III-3: Improve wayfinding signage to Battlefield from surrounding area.
- III-4: Develop coordinated wayfinding/signage program for historic sites outside and inside the Park.



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- III-5: Consider excursion train between Chattanooga Choo-Choo site and City of Chickamauga.
- III-6: Develop regional auto tour.
- III-7: Connect to regional trail network.

Strategy Description **I-1: Extension of US 27 relocation from SR 2/Battlefield Parkway to SR 146/Cloud Springs Road.**

Need and Purpose or Justification This strategy was proposed to alleviate existing and projected congestion on LaFayette Road north of SR 2/Battlefield Parkway and to reduce non-Park traffic inside the Chickamauga Battlefield. This project is listed in the Chattanooga 2025 LRTP, but it was not included in the unrefined model provided for this study.

Primary Impacts This strategy was tested in the refined Chattanooga MPO travel demand model for 2025. As modeled, this project is projected to decrease volumes along LaFayette Road between SR 2/Battlefield Parkway and SR 146/Cloud Springs Road from 40,600 vpd to 30,600 vpd, alleviating congestion in this corridor. Traffic volumes would decrease from 30,000 vpd to 19,100 vpd on SR 2/Battlefield Parkway west of LaFayette Road as well. Within the Battlefield, volumes on LaFayette Road are projected to decrease from 3,800 vpd to 2,200 vpd, which is below the 2003 modeled volume of 2,900 vpd at the same location.

Due to the improved connection, this project appears to increase the attractiveness of the US 27 relocation for north-south traffic to and from Chattanooga and decreases traffic within the Battlefield. The net benefits of this project exceed those of the alternative strategy *I-2, Extension of US 27 from SR 2/Battlefield Parkway to LaFayette Road/Chickamauga Avenue*.

This project appears as a viable strategy for plan development. Possible negative impacts include cost, environmental justice issues, and impacts to cultural and natural resources in the study area.



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Strategy Description	I-4: Intersection improvements at SR 2/Battlefield Parkway and LaFayette Road.
Need and Purpose or Justification	This strategy was proposed to alleviate existing and projected congestion at the intersection of LaFayette Road and SR 2/Battlefield Parkway. Level of service analysis (LOS) conducted for this intersection indicated that by 2025, the intersection would operate at LOS F.
Primary Impacts	Along with companion strategy <i>I-1: Extension of US 27 relocation from SR 2/Battlefield Parkway to SR 146/Cloud Springs Road</i> , these two strategies are targeted to maintaining throughput and mobility at this critical intersection. Though it is unlikely that operational adjustments alone could alleviate the 2025 future congestion, signal optimization and other operational improvements could mitigate traffic impacts in the short-term until the extension could be put in place. Once the extension of the US 27 relocation from SR 2/Battlefield Parkway to Cloud Springs Road has been constructed, the eastbound approach to the LaFayette Road, SR 2 intersection could be restriped to include a shared left/through lane through the intersection to continue to the three lanes already in place east of the intersection. Operational improvements at this location would be less expensive than new construction and could have positive safety impacts. Impacts to environmental and community resources would be minimal. Improving east-west mobility on US 27 Relocation to SR 2/Battlefield could also have a beneficial impact on the Chickamauga Battlefield, because it would be a preferable travel path as compared to McFarland Gap Road through the Battlefield.
Strategy Description	I-5: Improve intersection at US 27 relocation and Osburn Road by allowing safer ingress and egress to US 27 relocation.
Need and Purpose or Justification	Stakeholders indicated a safety need at this intersection primarily due to the change in travel patterns after the US 27 relocation. Entering and exiting the US 27 relocation at Osburn Road is the preferred travel path for traffic generated in the vicinity of the City of Chickamauga. This has been the site of safety problems and sight distances may be an issue for traffic entering or exiting US 27 relocation.
Primary Impacts	Due to local concerns, GDOT performed a signal warrant study at the US 27 relocation and Osburn Road. According to GDOT District 6, a traffic signal at this location met established Manual of Uniform Traffic Control Device (MUTCD) warrants. Walker County is responsible for the signal installation and power costs. The schedule for installation is unknown. In the meantime, a lower cost improvement to the intersection could include improving the delineation of



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the median refuge area on the US 27 relocation with pavement markings to minimize driver confusion.

Strategy Description **I-8: Improve shoulders and alignment on Burning Bush Road and provide turning lanes where warranted.**

Need and Purpose or Justification Like strategies *I-6: Widening Three Notch Road and Red Belt Road* and *I-7: Construction of a new north-south roadway between the Chickamauga Battlefield and Burning Bush Road*, the primary purpose of making operational changes on Burning Bush Road is to provide better north-south connectivity east of the Battlefield to SR 2/Battlefield Parkway and to Fort Oglethorpe. In addition, there are safety concerns including a high crash rate and limited horizontal sight distances on Burning Bush Road. The strategy is also in response to projected residential growth east and southeast of the Chickamauga Battlefield which will create greater demand on roadways with north-south connections.

Primary Impacts Though operational improvements to Burning Bush Road could be costly, the costs are estimated to be less than implementing strategies I-6 or I-7. There also would be environmental and community impacts requiring mitigation. On the whole, making improvements to Burning Bush Road would make a more attractive travel path east of the Battlefield in lieu of using roads that go through the Battlefield.

Strategy Description **I-9: Implement Demand Management program for commuters.**

Need and Purpose or Justification This strategy was proposed to optimize the study area's transportation network. The implementation of demand management programs such as a ridesharing program for Chattanooga area bound commuters from the study area could lessen travel demand on the network, thus reducing overall congestion on north-south roadways.

Primary Impacts Implementing a travel demand management program in the study area would have largely positive or neutral impacts on the Traffic Impact Study area and Battlefield Subarea. Theoretically, demand for the transportation network is reduced through these programs, and existing network capacity can be preserved. The success of demand management programs is related to the level of congestion mitigation impact on the area's network. Obstacles to implementation include public and private sector policies that discourage or inhibit ridesharing and the practical consideration of establishing a rideshare program to actively manage and operate commute option activities.



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Strategy Description **II-1: Widen SR 2/Battlefield Parkway from Cedar Lane to I-75 from four to six lanes.**

Need and Purpose or Justification This strategy was proposed to alleviate projected congestion on SR 2/Battlefield Parkway.

Primary Impacts This strategy was tested in the refined Chattanooga MPO travel demand model for 2025. As modeled, this project provides additional capacity to lessen congestion in the SR 2/Battlefield Parkway corridor. V/C ratios were reduced along SR 2/Battlefield Pkwy to 0.7 to 0.9 from 0.9 to 1.2 (over capacity) without the widening. The widening would lessen traffic on McFarland Gap Road and Reed's Bridge Road, reducing non-Park traffic through the Chickamauga Battlefield.

This project appears as a viable strategy for plan development. Possible negative impacts include cost, environmental justice issues, and impacts to cultural and natural resources in the study area. These impacts will be more fully evaluated for the final plan.

Strategy Description **II-2: Develop corridor management/access management plan for SR 2/Battlefield Parkway.**

Need and Purpose or Justification This strategy was proposed to alleviate projected congestion on SR 2/Battlefield Parkway as an alternate (or in addition to) strategy *II-1: Widen SR 2/Battlefield Parkway from Cedar Lane to I-75 from four to six lanes.*

Primary Impacts Overall impacts in the Traffic Impact Study area are positive or neutral. Developing a corridor management plan with access management standards for SR 2/Battlefield Parkway would improve mobility on Battlefield Parkway/SR 2 and provide the local governments and constituencies the opportunity to define desired future conditions for the corridor beyond traffic operations issues.

Maintaining the attractiveness of SR 2/Battlefield Parkway is essential for maximizing mobility and accessibility in the Traffic Impact Study area. Access management techniques could include reducing the number of curb cuts, providing interparcel access, and improving existing access points to improve turning radii. Other management plan techniques could include signal coordination and optimization along the entire corridor and installation of medians at locations with safety issues. These types of improvements are generally less costly than a capacity addition. A corridor management plan could help maintain east-west mobility in the study area in the short-range until such time when a widening such as II-1 was implemented.



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Strategy Description	II-4: Realign Thomas Road west of LaFayette Road and improve signage on Thomas Road and McFarland Gap Road.
Need and Purpose or Justification	This strategy was proposed to improve access and wayfinding to the hospital area, and improve understanding of access alternatives to the Fort Oglethorpe/LaFayette Road business district from the US 27 relocation.
Primary Impacts	The overall impacts of this strategy in the Traffic Impact Study area are positive. Improving access to the Hutcheson Medical Center and the Fort Oglethorpe/LaFayette Road business district has the potential to stimulate economic development of related businesses. A new entry statement for the Hutcheson Medical Center from LaFayette Road was included in the proposed streetscaping plan for a transportation enhancement grant. Improved access for emergency vehicles could also be achieved by improving the connections to the hospital area from LaFayette Road.
Strategy Description	II-5: Widen SR 146/Cloud Springs Road from LaFayette Road to US 41 from two to four lanes.
Need and Purpose or Justification	This strategy was proposed to alleviate proposed congestion and improve east-west mobility in the study area. This project was listed in the Chattanooga 2025 LRTP, but it was not included in the unrefined Chattanooga 2025 model. Safety concerns were indicated from crash data analysis.
Primary Impacts	The overall impacts of this strategy are positive. This strategy was tested in the refined Chattanooga MPO travel demand model for 2025 along with strategy <i>I-1: Extension of US 27 from SR 2 to SR 146</i> , which was also in the Chattanooga 2025 LRTP. As modeled, this project provides additional capacity to lessen congestion in the SR 2/Battlefield corridor, and should be coupled with strategy I-1 to provide maximum mobility benefits. There are no direct impacts on the Chickamauga Battlefield from this strategy. Negative impacts requiring additional evaluation in the plan development are cost and environmental justice community impacts.
Strategy	III-1: Conduct joint land use/transportation study on LaFayette Road corridor between the Chickamauga Battlefield and SR 2/Battlefield Parkway.
Need and Purpose or Justification	This strategy was proposed to support the revitalization of downtown Fort Oglethorpe and mitigate impacts from loss of traffic due to the US 27 relocation as indicated by local stakeholders.



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Primary Impacts

This strategy's impacts would be very positive in the Traffic Impact Study area, particularly in the Fort Oglethorpe/LaFayette Road business district and Fort Oglethorpe historic district. A joint land use/transportation study in the LaFayette Road corridor goes beyond the proposed streetscape improvements because it addresses underlying issues tied to existing and desired land use. Such a plan could help the corridor realize its economic development strengths and put a plan in place to support goals generated in the study.

Identification of the links between the LaFayette Road corridor and the Chickamauga Battlefield would facilitate development of better gateway linkages.

Strategy Description

III-2: Make streetscape improvements on LaFayette Road between the Chickamauga Battlefield and SR 2/Battlefield Parkway and connect to Battlefield visitor center with multi-use path facility.

Need and Purpose or Justification

This strategy was proposed to improve the connection between the Chickamauga Battlefield and surrounding gateway community. A proposed streetscape enhancement was developed by the City of Fort Oglethorpe for a GDOT transportation enhancement grant in 2004.

Primary Impacts

Like strategy *III-1: Conduct a joint land use/transportation study on LaFayette Road*, this strategy would generate largely positive impacts in the corridor. Since the US 27 relocation, the characteristics of this roadway have changed, and local travel patterns have also changed. Realizing the potential to enhance the visual image of the corridor as a primary gateway to the Chickamauga Battlefield (the NPS directs nearly all visitors down this route), there are potential secondary economic impacts from Park visitors. A streetscape enhancement could also provide separate facilities for bicyclists and pedestrians with an interface to the Chickamauga Battlefield and the Battlefield visitor center.



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Strategy Description	III-3: Improve wayfinding signage to Battlefield from surrounding area.
Need and Purpose or Justification	This strategy was proposed to improve the connection between the Chickamauga Battlefield and surrounding community by establishing visual gateway linkages.
Primary Impacts	Impacts from this strategy are positive for both the Traffic Impact Study area and the Battlefield Subarea. Leading visitors and local residents to the Chickamauga Battlefield and Lookout Mountain can strengthen gateway connections between the local area and the CCNMP.
Strategy Description	III-4: Develop coordinated wayfinding/signage program for historic sites outside and inside the Park.
Need and Purpose or Justification	This strategy was proposed to improve the connection between Chickamauga Battlefield and surrounding community by establishing visual gateway linkages.
Primary Impacts	Impacts from this strategy are positive for both the Traffic Impact Study area and the Battlefield Subarea. Historic resources related to the Civil War and other significant natural, cultural resources could be linked in the study area to the Chickamauga Battlefield by developing a coordinated and/or combined wayfinding signage program, such as that developed by the Chattanooga MPO for the Chattanooga area. By using a common visual language, wayfinding signage can help area visitors and local residents alike in interpreting and understanding the area's rich resources. The local area can benefit from secondary economic impacts of tourism if visitors have reason to stay longer in the area.
Strategy Description	III-5: Consider excursion train between Chattanooga Choo-Choo site and City of Chickamauga.
Need and Purpose or Justification	This strategy was proposed to improve the connection between the Chickamauga Battlefield and surrounding community by establishing an alternative means to access the Battlefield and surrounding communities' historic and cultural resources.
Primary Impacts	Connecting to the City of Chickamauga could have positive economic impacts for tourism in the study area. The railroad connection between the City of Chickamauga and the Battlefield already exists. The implementation of a scenic



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train operation would use existing rail facilities. Additional details such as operations and cost will be considered in the plan development.

Strategy III-6: Develop regional auto tour. **Description**

Need and Purpose or Justification This strategy was proposed to improve the connection between the Chickamauga Battlefield and surrounding community by a regional auto tour.

Primary Impacts Impacts from this strategy are positive for both the Traffic Impact Study area and the Battlefield Subarea. Created in coordination with a wayfinding/signage program, this strategy could enhance the economic impacts of area tourism because tourists would likely stay longer. Interpretation and understanding of the natural, cultural and historic resources could also be aided by coordinated tour map and resource documentation.

Strategy III-7: Connect to regional trail network. **Description**

Need and Purpose or Justification This strategy was proposed to improve the connection between the Chickamauga Battlefield and surrounding community by establishing gateway linkages for transportation alternatives, particularly strengthening ties between pedestrian, bicycle and equestrian paths and trails from outside the Battlefield to those inside the Battlefield.

Primary Impacts The impacts of this strategy are positive on the Traffic Impact Study area and Battlefield Subarea. The overall improvement for modal connectivity could also reduce vehicular use of Battlefield roadways in the secondary gateway corridors. Connections to the greater Chattanooga area and northwest Georgia existing, planned and proposed trail network could also have positive economic benefits for the local community encouraging tourist to use non-vehicular modes to the Park.

Strategies No Longer Under Consideration

Out of the strategies proposed for the Traffic Impact Study area, three will no longer be considered and one will be redefined and included in the proposed set of strategies for plan development. For each strategy, a description, need and purpose or justification, primary impacts, and reason(s) for dismissal are discussed. For an overall picture of each of the



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strategy's impacts, please refer to Table 2.2, Improvement Strategies Evaluation Matrix. The strategies no longer under consideration are:

- I-2: Extension of US 27 from SR 2/Battlefield Parkway to LaFayette Road/Chickamauga Avenue using Dewberry Road and Hogan Road.
- I-3: Widen LaFayette Road/Chickamauga Avenue from SR 146 to 37th Avenue in Chattanooga, Tennessee from four to six lanes.
- I-6: Widen Three Notch Road from US 41 to Boynton Road from two to four lanes and Red Belt Road from Burning Bush Road to US 27 from two to four lanes to facilitate north-south movement east of the Battlefield. (redefined)
- I-7: Construct a new two-lane minor arterial roadway from US 27 south of the Chickamauga Battlefield to SR 2/Battlefield Parkway near Beaver Road intersection, between the eastern Chickamauga Battlefield boundary and Burning Bush Road.

Strategy Description **I-2: Extension of US 27 from SR 2/Battlefield Parkway to LaFayette Road/Chickamauga Avenue using Dewberry Road and Hogan Road.**

Need and Purpose or Justification This strategy was proposed as an alternative to strategy *I-1: Extension of US 27 from SR 2/Battlefield Parkway to SR 146/Cloud Springs Road* which had been identified in the Chattanooga 2025 Long Range Transportation Plan. The purpose of this improvement is to provide a better northern connection for the US 27 relocation and ultimately to alleviate existing and projected congestion on LaFayette Road north of SR 2. It was expected that this strategy would also reduce non-Park traffic inside the Battlefield due to a better connection to the north and avoidance of congestion at the SR 2 and LaFayette Road intersection.

Primary Impacts This strategy was tested in the refined Chattanooga MPO travel demand model for 2025. As modeled, this project lowered future traffic volumes along LaFayette Road north of SR 146/Cloud Springs Road from 37,700 vehicles per day (vpd) to 29,200 vpd, which would consequently lower the volume to capacity (v/c) below 1.0. Future traffic south of SR 146/Cloud Springs Road decreased only 2,800 vehicles per day (vpd) versus the 10,000 vpd reduction with Strategy I-1. Future traffic volumes are expected to increase on SR 2/Battlefield Parkway, west of the SR 2, LaFayette Road, US 27 intersection from 19,100 vpd to 30,600 vpd. This strategy increases traffic volumes on US 27 through downtown Rossville.

Within the Chickamauga Battlefield, future traffic volumes on LaFayette Road are shown to decrease from 3,800 vpd to 1,500 vpd.

Reason(s) for Dismissal Compared to strategy I-1, this strategy increases future traffic volumes more on SR 2/Battlefield Parkway and on US 27 in Rossville, lowering its relative capacity benefits. It has the potential to cause a much greater negative impact on



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residents and cultural and natural resources. The topography along the proposed facility corridor would prove more difficult for widening from two to four lanes.

Strategy Description	I-3: Widen LaFayette Road/Chickamauga Avenue from SR 146 to 37th Avenue in Chattanooga, Tennessee from four to six lanes.
Need and Purpose or Justification	This strategy was proposed to alleviate existing and projected congestion on LaFayette Road north of SR 2/Battlefield Parkway to Chattanooga.
Primary Impacts	This strategy was tested in the refined Chattanooga MPO travel demand model for 2025. As modeled, this project appears to reduce congestion along much of the corridor. Without this capacity addition, v/c ratios on LaFayette Road/Chickamauga Avenue range from 1.2 to 1.8. With this capacity addition, v/c ratios drop to a range of 0.8 to 1.3. Congestion remains at the intersection with McFarland Avenue in Rossville. Traffic volumes are projected to increase on the US 27 relocation and decrease along Mission Ridge Road and Lytle Road. This project does not have measurable impact on traffic volumes inside the Battlefield.
Reason(s) for Dismissal	Though this strategy could alleviate some congestion in the LaFayette Road/Chickamauga Avenue corridor as a major travel route to Chattanooga, the benefits are outweighed by costs. This strategy would negatively impact the adjacent communities, natural resources, and would be very costly to implement.
Strategy Description	I-6: Widen Three Notch Road from US 41 to Boynton Road from two to four lanes and Red Belt Road from Burning Bush Road to US 27 from two to four lanes to facilitate north-south movement east of the Battlefield.
Need and Purpose or Justification	This strategy was proposed to improve north-south connectivity east of the Battlefield. Projected future residential growth east and southeast of the Battlefield has the potential to generate additional traffic on roads through the Battlefield unless local residents have better north-south travel routes to SR 2/Battlefield Parkway and Fort Oglethorpe. By improving the north-south connection, it is thought local traffic would have a better way to travel using roads other than those that pass through the Chickamauga Battlefield.
Primary Impacts	This strategy was tested in the refined Chattanooga MPO travel demand model for 2025. As modeled, this project attracts only a slight increase in future traffic. It did not have any discernable impact on traffic volumes on roads within the Chickamauga Battlefield.



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Reason(s) for Dismissal	<p>This strategy does not appear to fulfill its purpose of diverting future traffic away from the Chickamauga Battlefield roads. A widening project of this magnitude would also have negative impacts on the natural resources in the area and be costly. Stakeholders expressed concern that any eastern “bypass” would continue to erode traffic to the Fort Oglethorpe/LaFayette Road business district. As initially proposed, this strategy will no longer be considered.</p>
Revised Description	<p>The need for maintaining north-south mobility and accessibility in the study area, east of the Chickamauga Battlefield, remains. As an alternate to widening, this strategy will be revised to reflect improving and maintaining mobility through operational improvements. Operational strategies could include improving the roadway shoulders, improving the roadway alignment, and/or adding turning lanes where warranted. For the plan development, operational improvement techniques will be considered for Three Notch Road and Red Belt Road.</p>
Strategy Description	<p>I-7: Construct a new two-lane minor arterial roadway from US 27 south of the Chickamauga Battlefield to SR 2/Battlefield Parkway near Beaver Road intersection, between the eastern Chickamauga Battlefield boundary and Burning Bush Road.</p>
Need and Purpose or Justification	<p>Like strategy <i>I-6: Widening Three Notch Road and Red Belt Road</i>, this strategy was proposed to improve north-south connectivity east of the Battlefield. Projected future residential growth east and southeast of the Battlefield has the potential to generate additional traffic on roads through the Battlefield unless local residents have better north-south travel routes to SR 2/Battlefield Parkway and Fort Oglethorpe. By constructing a new north-south connection, local traffic would have a better travel route to Fort Oglethorpe and SR 2/Battlefield Parkway rather than using roads through the Chickamauga Battlefield.</p>
Primary Impacts	<p>This strategy was tested in the refined Chattanooga MPO travel demand model for 2025. As modeled, this project appears to reduce nearly all non-Park traffic on roads on the eastern side of the Battlefield. With this strategy, traffic volumes are projected to decrease on LaFayette Road through the Battlefield by 1,000 vpd, decrease on Burning Bush Road by 2,000 vpd, and decrease on US 27 relocation by 3,000 vpd.</p> <p>Negative impacts of this strategy include its environmental and community impacts. Much of the land between the eastern Battlefield boundary and Burning Bush Road lies within the West Chickamauga Creek floodplain and watershed. Consequently, the environmental impacts of new construction would likely be costly and difficult to mitigate. This strategy also has the potential to negatively impact view sheds of the Battlefield and the local community.</p>



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Stakeholders expressed concern that any eastern “bypass” would continue to erode traffic to the Fort Oglethorpe/LaFayette Road business district.

Reason(s) for Dismissal	Though a new north-south roadway east of the Battlefield has the potential to draw traffic off of Park roads, the environmental and community costs would outweigh its benefit. Two eastern alignments of the US 27 relocation were originally considered in the environmental impact statement for the relocation of US 27, but they were dismissed due to negative environmental impacts. Preservation of right-of-way along the east side of the Battlefield for some type of corridor, not necessarily passenger automobile, could be considered for implementation beyond the year 2025.
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Strategy for Additional Evaluation

One strategy will be further studied before deciding whether this strategy should be included in the draft plan: *II-3: Widen McFarland Gap Road from Mission Ridge Road to LaFayette Road from two to four lanes.*

Strategy Description	II-3: Widen McFarland Gap Road from Mission Ridge Road to LaFayette Road from two to four lanes.
Need and Purpose or Justification	This strategy was proposed by stakeholders to improve connectivity between the US 27 relocation and the Fort Oglethorpe/LaFayette Road business district. It is thought that a McFarland Gap Road widening would increase traffic through the Fort Oglethorpe/LaFayette Road business district. This project was also included in the original, unrefined Chattanooga MPO travel demand model provided for the study.
Primary Impacts	This strategy was tested in the refined Chattanooga MPO travel demand model for 2025. As modeled, this project is projected to increase traffic volumes at the US 27 relocation/McFarland Gap Road interchange from 4,400 vpd to 6,700 vpd, an increase of 2,300 vpd over a no-build condition. Volumes south of McFarland Gap Road on the US 27 relocation are projected to increase by 2,200 vpd. This would increase the v/c ratio on the US 27 relocation to 0.85.

A majority of McFarland Gap Road between the US 27 relocation and LaFayette Road is within the Chickamauga Battlefield boundaries. A widening would negatively impact the Battlefield’s historic, cultural, and natural landscape. In addition, this project would contradict CCNMP policies and goals and detract from the desired visitor experience. One proposed Park project is to change the orientation of visitor center access from LaFayette Road to McFarland Gap Road. A widening would create more traffic and have the potential to create an



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unsafe traveling condition for visitors. Traffic control at LaFayette Road and McFarland Gap Road/Reed's Bridge Road is also a concern for the Park service.

The existing and future need for better accessibility and mobility northwest of the Chickamauga Battlefield does exist, and preserving mobility along SR 2/Battlefield Parkway is essential. Analysis of Fort Oglethorpe/LaFayette Road business district accessibility must be balanced with the context of the Chickamauga Battlefield and importance of McFarland Gap Road in meeting the Park's goals and objectives. This strategy requires further evaluation in the plan development phase.

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4 Subarea Transportation Plan Strategies

Following the planning evaluation and input from the public, the Stakeholder Participation Panel and Project Coordinating Committee, a collection of strategies for plan development was established. Battlefield Subarea strategies were put into three different categories: strategies for plan development, strategies for consideration in the Chickamauga and Chattanooga National Military Park General Management Plan process, and strategies no longer under consideration. One strategy was added and requires additional evaluation. The major impacts of each strategy are presented in this section. Maps depicting the Battlefield Subarea strategies are shown in Figures 2.4 through 2.7.

Proposed Plan Strategies

Five strategies are proposed for plan development in the Battlefield Subarea. These strategies directly relate to the Chickamauga Battlefield's transportation network operations. For each strategy, a description, need and purpose or justification, and primary impacts are presented. For an overall picture of each of the strategy's impacts, please refer to Table 2.2, Improvement Strategies Evaluation Matrix. The strategies proposed for plan development are:

- IV-3: Circulation changes on Brotherton Road (one-way westbound), Viniard-Alexander Road (one-way eastbound), and Jay's Mill Road (one-way northbound).
- IV-4: Road closures at Park entrance locations on Lytle Road, Long Hollow Road, Osburn Road, Wilder Road, and Jay's Mill Road.
- IV-8: Change orientation and connection to the Chickamauga Battlefield visitor center to McFarland Gap Road from LaFayette Road.
- IV-9: New directional signage at major intersections to major historic sites within the Battlefield.
- IV-10: Clarify commercial vehicle standards for Park roads.

Strategy Description	IV-3: Circulation changes on Brotherton Road (one-way westbound), Viniard-Alexander Road (one-way eastbound), and Jay's Mill Road (one-way northbound).
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Need and Purpose or Justification	This strategy was proposed to improve the interpretative experience for Park users and visitor safety. These circulation changes could support future development of expanded automobile tour routes in the Battlefield. In addition, by converting these roadways to one-way, additional pavement width could be converted to a bicycle lane to enhance safety and movement for those riding bicycles through the Park. One-way designation may also provide more flexibility for creating additional pull-off parking areas without any physical impacts to the cultural and natural resources.
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Primary Impacts

This strategy was tested in the refined Chattanooga MPO travel demand model for 2025. As modeled, this strategy would decrease traffic volumes along LaFayette Road, south of Brotherton Road from 1,700 vpd to 900 vpd and on Brotherton Road from 1,000 vpd to fewer than 100 vpd. There is no discernable impact on traffic volumes on Alexander's Bridge Road or LaFayette Road, north of Brotherton Road. This strategy has a minimal impact on Reed's Bridge Road outside of the Park boundaries. Other impacts within the Battlefield are positive or neutral.

Strategy Description

IV-4: Road closures at Park entrance locations on Lytle Road, Long Hollow Road, Osburn Road, Wilder Road, and Jay's Mill Road.

Need and Purpose or Justification

This strategy was proposed to improve the interpretative experience for Park users, protect resources and enhance visitor safety.

Primary Impacts

Closures at Lytle Road, Long Hollow Road, Osburn Road, Wilder Road, and Jay's Mill Road were tested in the refined Chattanooga MPO travel demand model for 2025. As modeled, these closures decrease traffic volumes on secondary Park roads. It appears traffic could increase on LaFayette Road and Reed's Bridge Road as compared to the no-action alternative or the one-way loop strategy. Overall, the impacts of this strategy on the Battlefield Subarea are positive.

The Park service currently has to maintain thirteen entry points to the Chickamauga Battlefield. The primary gateway and entrance to the Battlefield is from the north at LaFayette Road. The Park's policy is to direct nearly all visitors from outside the Park to the entrance at LaFayette Road. Existing and future volumes at some of the minor entry points into the Park such as along the western border are very low, but there would be a negative impact on travelers from the Traffic Impact Study area who use Park roads for their local travel. Negative impacts resulting from this strategy will be more fully evaluated for the final plan. Although the Chattanooga model can only test gate closures over a 24-hour period, time of day and phasing of road closures will also be considered.

It should be noted that the travel demand model does not indicate a need for both a one-way loop (strategy IV- 3) and gate closures. Due to the increased benefits and minimal impacts to the surrounding community, implementing the one-way loop strategy is recommended in the short term. In addition, night gate closures could be considered by the Park. Although 24-hour gate closures would reduce Park maintenance responsibilities and preserve resources, 24-hour gate closures are not needed to address travel demand.



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Strategy Description	IV-8: Change orientation and connection to the Chickamauga Battlefield visitor center to McFarland Gap Road from LaFayette Road.
Need and Purpose or Justification	This strategy was proposed to restore historic fields and view sheds in the Chickamauga Battlefield landscape.
Primary Impacts	The impacts of this strategy on Battlefield Subarea are positive. In the plan development, this strategy will also consider opportunities for making connections to the Fort Oglethorpe historic district at this location.
Strategy Description	IV-9: New directional signage at major intersections to major historic sites within the Battlefield.
Need and Purpose or Justification	This strategy was proposed to enhance wayfinding within the Park.
Primary Impacts	In conjunction with strategy <i>III-3: Improve wayfinding signage to the Battlefield from surrounding area</i> and <i>III-4: Develop coordinated wayfinding/signage program for historic sites outside and inside the Park</i> , this strategy could have positive impacts both inside the Battlefield and in the Traffic Impact Study area for visitor and local resident wayfinding.
Strategy Description	IV-10: Clarify commercial vehicle standards for Park roads.
Need and Purpose or Justification	This strategy was proposed to reduce confusion among commercial vehicle operators regarding NPS commercial vehicle standards, improve the interpretative experience for Park users, and enhance visitor safety.
Primary Impacts	Battlefield Subarea impacts from this strategy are positive. Residents, visitors, and commercial vehicle operators would benefit from improved communication of NPS commercial vehicle standards. In the plan development, signage and wayfinding standards for commercial vehicles will be further examined.



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Strategies for consideration in the Chickamauga and Chattanooga National Military Park General Management Plan process

Eight proposed strategies for the Chickamauga Battlefield will remain in the final draft plan and are proposed for additional evaluation in the CCNMP General Management Plan process. Each of these strategies has impacts, but there are needs, issues and impacts of these strategies which this transportation study cannot appropriately address. In the transportation impact evaluation, it was determined these strategies do not adversely impact mobility and access, but their full impact related to Park operations and Park purpose cannot be assessed within this transportation study. The strategies for consideration in the GMP planning process are:

- IV-1: Expand tour route for automobiles - Alexander's Bridge Road to Jay's Mill Road to Brotherton Road to LaFayette Road.
- IV-2: Expand tour route for automobiles - Reed's Bridge Road to Jay's Mill Road to Brotherton Road to Alexander's Bridge Road.
- IV-5: Expand touring routes for alternative modes: bicycling, pedestrian, equestrian; include dedicated parking facilities.
- IV-6: Develop Park Road Multimodal Functional Classification System that includes design speed, road character/pavement surface type, modal designation and purpose.
- IV-7: Expand or enhance parking facilities and/or interpretive stations at Alexander's Bridge, Winfrey Field, Brock Field, Wilder Brigade Monument, Jay's Mill, Kelly Field, Viniard Field West, and Reed's Bridge for expanded auto tour route(s).
- IV-11: Lower speed limit on LaFayette Road.
- IV-12: Lower speed limits on McFarland Gap Road and Reed's Bridge Road.
- IV-13: Develop an alternative transportation/Park shuttle system.

Strategy Description	IV-1: Expand tour route for automobiles - Alexander's Bridge Road to Jay's Mill Road to Brotherton Road to LaFayette Road. Starting at the Chickamauga Battlefield visitor center, visitors would proceed south of LaFayette Road to Alexander's Bridge Road and take Alexander's Bridge Road to Alexander's Bridge. From Alexander's Bridge, visitors would proceed north on Alexander's Bridge Road to Jay's Mill Road. The tour could continue west along Brotherton Road, turning north onto LaFayette Road and pick up existing tour route for the Day Two battle interpretation. Along the existing tour route, the original alignment of Glenn-Viniard Road, west of Wilder Brigade Monument, would be restored.
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Need and Purpose or Justification	This strategy was proposed to improve the interpretative experience for the first day of the Chickamauga battle and enhance visitor safety. For the purposes of this study, tour route options have been reviewed and combined into two alternatives (IV-1 and IV-2) that represent the broadest changes to the visitor circulation pattern and experience. Strategies IV-1 and IV-2 include the most
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roads and have the greatest opportunity for adding or expanding interpretive stations.

Primary Impacts

Though this strategy has positive impacts related to visitor experience, Park policies, goals and objectives, and safety, there is generally a neutral impact on the Battlefield's transportation network. As proposed, this strategy will remain in the final draft plan but will not be refined. Consideration should be given to enhancing the visitor tour routes in the CCNMP General Management Plan process.

Strategy Description

IV-2: Expand tour route for automobiles - Reed's Bridge Road to Jay's Mill Road to Brotherton Road to Alexander's Bridge Road. Starting at the visitor center, this tour would have visitors travel east on Reed's Bridge Road and travel outside of the Park's boundaries to interpret related lands at Reed's Bridge. From Reed's Bridge, visitors would then travel to the Jay's Mill site, proceed west on Brotherton Road and north on Alexander's Bridge Road. From the interpretive stop at the Brotherton Cabin, visitors would turn west along Dyer Road and travel along the southern portion of Chickamauga-Vittetoe Road before turning north on Glenn-Kelly for resumption of the existing auto tour route.

Need and Purpose or Justification

This strategy was proposed to improve the interpretative experience for the first day of the Chickamauga battle and enhance visitor safety. For the purposes of this study, tour route options have been reviewed and combined into two alternatives (IV-1 and IV-2) that represent the broadest changes to the visitor circulation pattern and experience. Strategies IV-1 and IV-2 include the most roads and have the greatest opportunity for adding or expanding interpretive stations.

Primary Impacts

Though this strategy has positive impacts related to visitor experience, Park policies, goals and objectives, and safety, there is generally a neutral impact on the Battlefield's transportation network. As proposed, this strategy will remain in the final draft plan but will not be refined. Consideration should be given to enhancing the visitor tour routes in the CCNMP General Management Plan process.

Strategy Description

IV-5: Expand touring routes for alternative modes: bicycling, pedestrian, equestrian; include dedicated parking facilities.

Need and Purpose or Justification

This strategy was proposed to improve the interpretative experience and enhance visitor safety for visitors using alternative modes.



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Primary Impacts	Though this strategy has positive impacts related to visitor experience, Park policies, goals and objectives, and safety, there is generally a neutral impact on the Battlefield's transportation network. As proposed, this strategy will remain in the final draft plan but will not be refined. Consideration should be given to enhancing the visitor tour routes in the CCNMP General Management Plan process. Making connections between the existing non-motorized routes, trails, and paths between the Chickamauga Battlefield and the Traffic Impact Study area will be further explored in the final draft plan.
Strategy Description	IV-6: Develop Park Road Multimodal Functional Classification System that includes design speed, road character/pavement surface type, modal designation and purpose.
Need and Purpose or Justification	This strategy was proposed to provide enhanced road classification standards for all Park roads and trails within the Chickamauga Battlefield.
Primary Impacts	<p>The purpose of this strategy was to provide the Chickamauga Battlefield Unit of the CCNMP with a functional classification system that related the Park road functional classification system to its resources and national standards, a context-sensitive functional classification. The federal legislative, regulatory and policy requirements that guide Park operations would make this system subject to an extensive NPS evaluation process.</p> <p>The roadways, trails, and other transportation infrastructure within the Chickamauga Battlefield belong to the NPS. NPS road design standards and functional classification are set by legislative statutory and federal regulatory requirements (23 CFR 1230, 23 USC 402, 23 USC 204). Within the Chickamauga Battlefield, many of the roadways and trails have historic origins dating to the Civil War and the Park's commemorative period. Further defining the Park Road functional classification specifically for the CCNMP should be considered during the GMP process.</p>
Strategy Description	IV-7: Expand or enhance parking facilities and/or interpretive stations at Alexander's Bridge, Winfrey Field, Brock Field, Wilder Brigade Monument, Jay's Mill, Kelly Field, Viniard Field West, and Reed's Bridge for expanded auto tour route(s).
Need and Purpose or Justification	This strategy was proposed to improve the interpretative experience for the first day of the Chickamauga battle and enhance visitor safety. This strategy should be considered in conjunction with proposed auto tour routing in strategies <i>IV-1: Expanded tour route from Alexander's Bridge Road to Jay's Mill Road to</i>



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Brotherton Road to LaFayette Road and IV-2: Expanded tour route from Reed's Bridge Road to Jay's Mill Road to Brotherton Road to Alexander's Bridge Road.

Primary Impacts Though this strategy has positive impacts related to visitor experience, resources and Park policies, goals and objectives, there is no impact on the Battlefield's transportation network. As proposed, this strategy will remain in the final draft plan but will not be refined. Consideration should be given to enhancing the parking facilities and/or interpretive stations along with tour route modifications in the CCNMP General Management Plan process.

Strategy Description **IV-11: Lower speed limit on LaFayette Road.**

Need and Purpose or Justification This strategy was proposed to help maintain Park cultural resources and minimize non-Park traffic.

Primary Impacts This strategy was tested in the refined Chattanooga MPO travel demand model for 2025. As modeled, this strategy would reduce traffic volumes on LaFayette road to less than 300 vpd, largely eliminating non-Park traffic from LaFayette Road in the Chickamauga Battlefield. Traffic volumes on the US 27 relocation would increase about 2,000 vpd, but the capacity of the US 27 relocation is sufficient to absorb this traffic volume increase. A slight decrease in traffic occurred on Reed's Bridge Road.

On the whole, it appears that lowering the speed on LaFayette Road does not significantly impact regional mobility. Travel patterns could change, but the speed change would not result in congestion on the roadway network. As proposed, this strategy will remain in the final draft plan but will not be refined. While reducing the speeds on LaFayette Road in the model had a positive impact on Park roads, changing the speed limit on LaFayette Road should be considered in the CCNMP General Management Plan process.

Strategy Description **IV-12: Lower speed limits on McFarland Gap Road and Reed's Bridge Road.**

Need and Purpose or Justification This strategy was proposed to help maintain Park cultural resources and minimize non-Park traffic.

Primary Impacts This strategy was tested in the refined Chattanooga MPO travel demand model for 2025. As modeled, this strategy would decrease traffic volumes from 8,400



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vpd to 4,700 vpd on Reed's Bridge Road, east of LaFayette Road and from 7,100 vpd to 4,800 vpd on McFarland Gap Road, west of LaFayette Road. With the reduction of speed on McFarland Gap Road/Reed's Bridge Road, traffic volumes increased approximately 1,000 to 2,000 vpd on SR 2/Battlefield Parkway and increase approximately 2,000 vpd on the US 27 relocation.

Overall impacts of this strategy on the Battlefield Subarea and Traffic Impact Study area are largely positive. On the whole, it appears that lowering the speed on McFarland Gap Road/Reeds Bridge Road does not significantly impact regional mobility. Travel patterns could change, but the speed change would not result in congestion on the roadway network. As proposed, this strategy will remain in the final draft plan but will not be refined. Changing the speed limit on McFarland Gap Road/Reeds Bridge Road should be considered in the CCNMP General Management Plan process.

Strategy Description

IV-13: Develop an alternative transportation/Park shuttle system.

Need and Purpose or Justification

This strategy was proposed to improve interpretative experience for Park users and enhance visitor safety.

Primary Impacts

Overall, impacts from this strategy on the Battlefield Subarea and Traffic Impact Study area are positive. A Park shuttle system could supplement the development of the regional auto tour and provide secondary economic benefits for the communities surrounding the Battlefield. This strategy is viewed as a long-range strategy and should be considered in the CCNMP General Management Plan process.

Strategy No Longer Under Consideration

Out of the fourteen strategies originally proposed for the Battlefield Subarea, one will no longer be considered. The strategy's description, need and purpose or justification, primary impacts, and reasons for dismissal are discussed. For an overall picture of the strategy's impacts, please refer to Table 2.2, Improvement Strategies Evaluation Matrix. The strategy no longer under consideration is *IV: Increase speed limit on LaFayette Road*.



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Strategy Description

IV-14: Increase speed limit on LaFayette Road.

Need and Purpose or Justification

This strategy was proposed to improve north-south access and increase activity on LaFayette Road north of Battlefield. Loss of through traffic and economic viability in the Fort Oglethorpe/LaFayette Road business district is cited as a major impact from the US 27 relocation by local area businesses and stakeholders.

Primary Impacts

This strategy was tested in the refined Chattanooga MPO travel demand model for 2025. As modeled, this project would increase traffic on LaFayette Road, south of McFarland Gap Road/Reed's Bridge Road from 2,200 vpd to over 12,000 vpd. Traffic volumes north of the McFarland Gap Road/Reed's Bridge Road intersection on LaFayette Road would increase from 8,700 vpd to 16,200 vpd. Volumes on the US 27 relocation dropped by half.

Impacts of this strategy on the Chickamauga Battlefield are uniformly negative. Increasing traffic on LaFayette Road would be in direct conflict with the Park's purpose and objectives (see Section 1). This would also negate the need and purpose of implementing the US 27 relocation. Visitor experience would be negatively impacted since more traffic on LaFayette Road would increase the conflict between Park and non-Park users in regards to safety and resource interpretation. LaFayette Road received the highest sensitivity rating in the cultural assessment, and resources along LaFayette Road would be in greater jeopardy by an increase in travel speeds. The safety of operations on LaFayette Road would also be an issue causing concerns from two perspectives, safety of the traveling public and NPS liability.

Reasons for Dismissal

The primary reason for dismissal is that this strategy is in direct conflict with two goals established for this study, increasing the attraction of the US 27 relocation and minimizing the adverse impacts of traffic on the CCNMP resources. As modeled, traffic is diverted off the US 27 relocation which was designed to handle more traffic at higher speeds safely. Increased traffic on LaFayette Road would damage the visitor's experience and possibly damage historic and cultural resources along LaFayette Road. The secondary benefits of increased economic activity along the Fort Oglethorpe/LaFayette Road business district attributable to an increase in traffic volumes are unclear given the strong economic development focus on SR 2/Battlefield Parkway.



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Strategy for Additional Evaluation

One strategy was added for evaluation following the stakeholder meeting on February 2, 2004. This strategy will be modeled and evaluated to see if it should be included in the draft plan: *IV-15: Consider gate closure at Alexander's Bridge Road*. This strategy was added due to its omission from evaluation of other Park road closures in strategy IV-4.

Strategy Description

IV-15: Consider gate closure at Alexander's Bridge Road.

Need and Purpose or Justification

This strategy was proposed to improve the interpretative experience for Park users, protect resources and enhance visitor safety.

Primary Impacts

Though not originally submitted in the list of proposed strategies, this strategy will be evaluated prior to the preparation of the draft plan.

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5 Summary and Next Steps

This memorandum presented the improvement strategy evaluation process for the Traffic Impact Study area and the Battlefield Subarea. Through an evaluation sequence which included qualitative and quantitative assessment as well as input from stakeholders and the public, strategies were screened to decide which would be recommended for additional plan development.

Thirty-five strategies were originally proposed and evaluated, and one strategy has been added to the original list for a total of thirty-six strategies. *I-15: Consider gate closure at Alexander's Bridge Road*, was added due to its previous omission from strategy *IV-4: Road closures at Park entrance locations*. Twenty-two improvement strategies are proposed for inclusion in the draft plan. One strategy, *I-6: Improve Three Notch Road and Red Belt Road*, was modified to delete "widening from two to four lanes along the entire length to provide an eastern bypass."

Four of the original 35 strategies will no longer be considered. Eight strategies will be included in the draft plan, but there will be no additional development of these strategies. These eight strategies, which focused on the Battlefield Subarea, will be recommended for further consideration by the National Park Service during the future preparation of the Chickamauga and Chattanooga National Military Park's General Management Plan. All strategies are summarized in Table 5.1

Out of all the proposed strategies for plan refinement, there are two "hot spots" which require additional evaluation and analysis before a decision is made to carry these strategies, which address these hot spots, through to the draft plan. The strategies for further study are:

- II-3: Widen McFarland Gap Road (from two to four lanes) from Mission Ridge Road to LaFayette Road
- IV-15: Consider gate closure at Alexander's Bridge Road

The primary issue for both of these strategies is whether sufficient network capacity and mobility for local and regional travel exists outside of the Chickamauga Battlefield roadway network. Maintaining accessibility to and within historic Fort Oglethorpe and the LaFayette Road business district is important. During the preparation of the draft plan, opportunities for improving the access into the Fort Oglethorpe/LaFayette Road business district north-northwest of the Battlefield will be further studied. Analysis of Fort Oglethorpe/LaFayette Road business district accessibility must be balanced with the context of the Chickamauga Battlefield and importance of McFarland Gap Road in meeting the Park's goals and objectives. Maintaining accessibility east of the Chickamauga Battlefield is also important. A road closure at Alexander's Bridge Road to meet Park goals and objectives for interpretation at that site must be balanced with local and regional travel demand.



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The proposed strategies will be developed in the draft plan, and project phasing will be considered. Another crucial element will be identifying possible funding mechanisms and sources. Having enough resources to implement proposed projects is one of the primary challenges in Fort Oglethorpe, Walker County and Catoosa County.

A draft plan will be developed by late March 2004. An open house public meeting is scheduled for March 30, 2004 in Fort Oglethorpe to solicit comment on the draft plan.

**Table 5.1
Proposed Strategies**

ID No.	Improvement Strategy	Draft Plan Development	Draft Plan GMP Consideration	No Longer Under Consideration
I. North-South Mobility and Connectivity to Chattanooga				
I-1	Extension of US 27 from SR 2/Battlefield Parkway to SR 146/Cloud Springs Road	✓		
I-2	Extension of US 27 from SR 2/Battlefield Parkway to LaFayette Road/Chickamauga Avenue			✓
I-3	Widen LaFayette Road/Chickamauga Avenue from SR 146 to 37th Avenue in Chattanooga (4 to 6 lanes)			✓
I-4	Intersection improvements at SR 2/Battlefield Parkway and LaFayette Road	✓		
I-5	Improve intersection at US 27 relocation and Osburn Road	✓		
I-6	Improve Three Notch Road and Red Belt Road	✓		
I-7	Construct new eastern bypass between Park boundary and Burning Bush Road			✓
I-8	Improve shoulders and alignment on Burning Bush Road	✓		
I-9	Implement Demand Management program for commuters	✓		
II. East-West Mobility and Mobility within Fort Oglethorpe				
II-1	Widen SR 2/Battlefield Parkway from Cedar Lane to I-75 (4 to 6 lanes)	✓		
II-2	Develop access management/corridor management plan on SR 2/Battlefield Parkway	✓		
II-3	Widen McFarland Gap Road from Mission Ridge Road to LaFayette Road (2 to 4 lanes)		<i>under additional study</i>	



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Table 5.1, continued

ID No.	Improvement Strategy	Draft Plan Development	Draft Plan GMP Consideration	No Longer Under Consideration
II-4	Realign Thomas Road west of LaFayette Road and improve signage on Thomas Road and McFarland Gap Road	✓		
II-5	Widen SR 146/Cloud Springs Road from LaFayette Road to US 41 (2 to 4 lanes)	✓		
III. Gateway Linkages between Battlefield and Surrounding Area				
III-1	Conduct joint land use/transportation study on LaFayette Road corridor between Chickamauga Battlefield and SR 2/Battlefield Parkway	✓		
III-2	Make streetscape improvements on LaFayette Road between Chickamauga Battlefield and SR 2/Battlefield Parkway and connect to Battlefield visitor center with multi-use path facility	✓		
III-3	Improve wayfinding signage to the Chickamauga Battlefield from surrounding area	✓		
III-4	Develop coordinated wayfinding/signage program for historic sites outside and inside the Park	✓		
III-5	Consider excursion train between Chattanooga Choo-Choo site and the City of Chickamauga	✓		
III-6	Develop regional auto tour	✓		
III-7	Connect to the regional trail network	✓		
IV. CCNMP Battlefield Visitor Experience/Operational Improvements				
IV-1	Expand tour route for automobiles - Alexander's Bridge Road to Jay's Mill Road to Brotherton Road to LaFayette Road		✓	
IV-2	Expand tour route for automobiles - Reed's Bridge Road to Jay's Mill Road to Brotherton Road to Alexander's Bridge Road		✓	
IV-3	Circulation changes on Brotherton Road (one-way westbound), Viniard-Alexander Road (one-way eastbound), and Jay's Mill Road (one-way northbound)	✓		
IV-4	Road closures at Park entrance locations: Lytle Road, Long Hollow Road, Osburn Road, Wilder Road, and Jay's Mill Road	✓		



Chickamauga and Chattanooga National Military Park Traffic Impact Study and Subarea Transportation Plan



Table 5.1, continued

ID No.	Improvement Strategy	Draft Plan Development	Draft Plan GMP Consideration	No Longer Under Consideration
IV-5	Expand touring routes for alternative modes: bicycling, pedestrian, equestrian; include dedicated parking facilities		✓	
IV-6	Develop Park Road Multimodal Functional Classification System that includes design speed, road character/pavement surface type, modal designation and purpose		✓	
IV-7	Expand or enhance parking facilities and/or interpretive stations at Alexander's Bridge, Winfrey Field, Brock Field, Wilder Brigade Monument, Jay's Mill, Kelly Field, and Reed's Bridge for expanded auto tour route(s)		✓	
IV-8	Change orientation and connection to Battlefield visitor center to McFarland Gap Road from LaFayette Road	✓		
IV-9	New directional signage at major intersections to major historic sites within the Battlefield	✓		
IV-10	Clarify commercial vehicle standards for Park roads	✓		
IV-11	Lower speed limit on LaFayette Road		✓	
IV-12	Lower speed limits on McFarland Gap Road and Reed's Bridge Road		✓	
IV-13	Develop an alternative transportation/Park shuttle system		✓	
IV-14	Increase speed limit on LaFayette Road			✓
IV-15	Consider gate closure at Alexander's Bridge Road		<i>under additional study</i>	

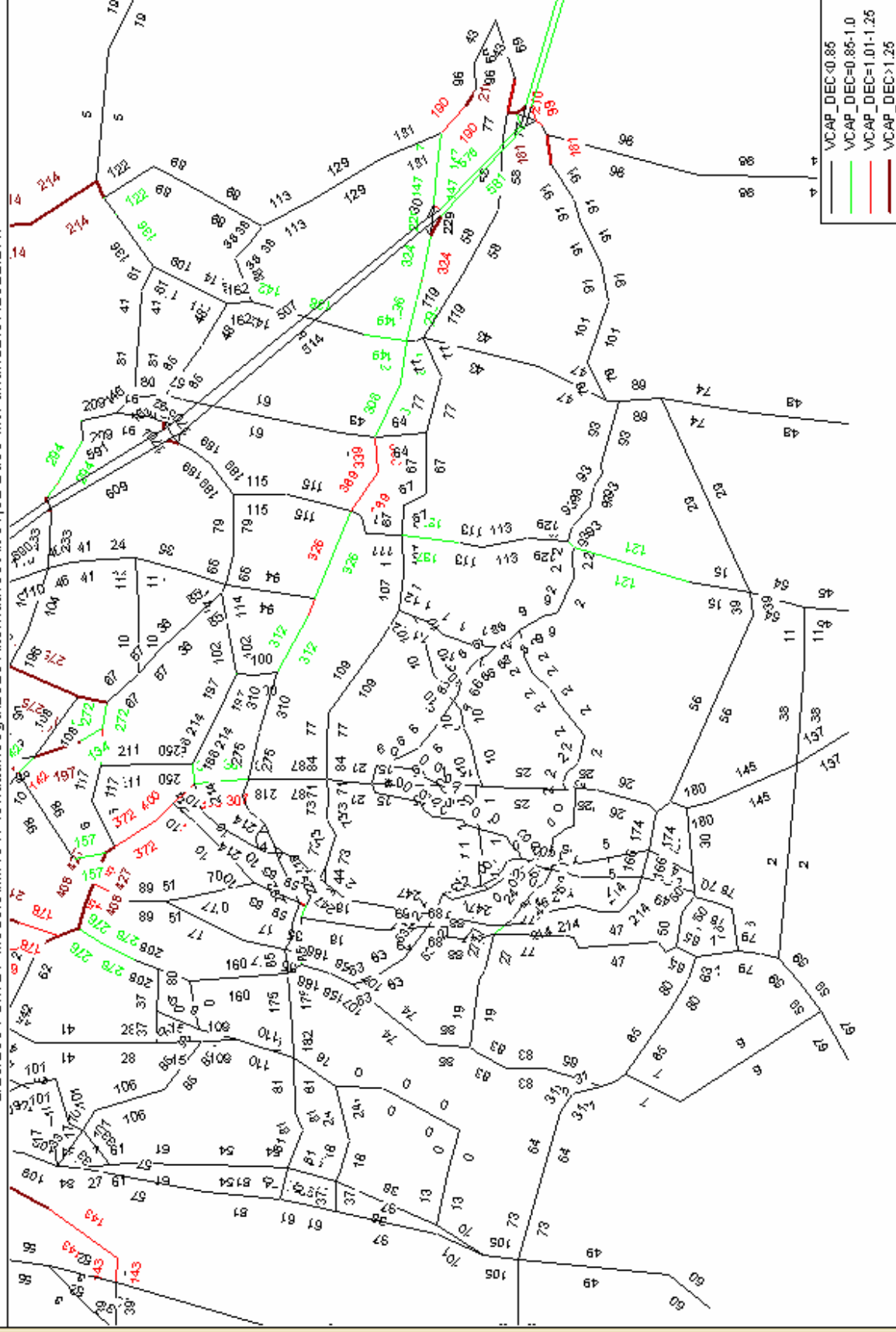
Appendix: Model Technical Documentation

CCNMP Transportation Study

2025 LRTP Base Alternatives Network (McFarland Gap as 2 Total Lanes, Extension of US 27 from Battlefield Pkwy. to SR 146, and Widening of SR 146)

Volume-to-Capacity Ratio Bandwidth with Total Volumes (in 100s)

2/26/2004 S:\TDF Models\MINUTPI\Chattanooga\2025 Alternatives\Alt 01_02 Base-McFarland\21CH2522.DAT

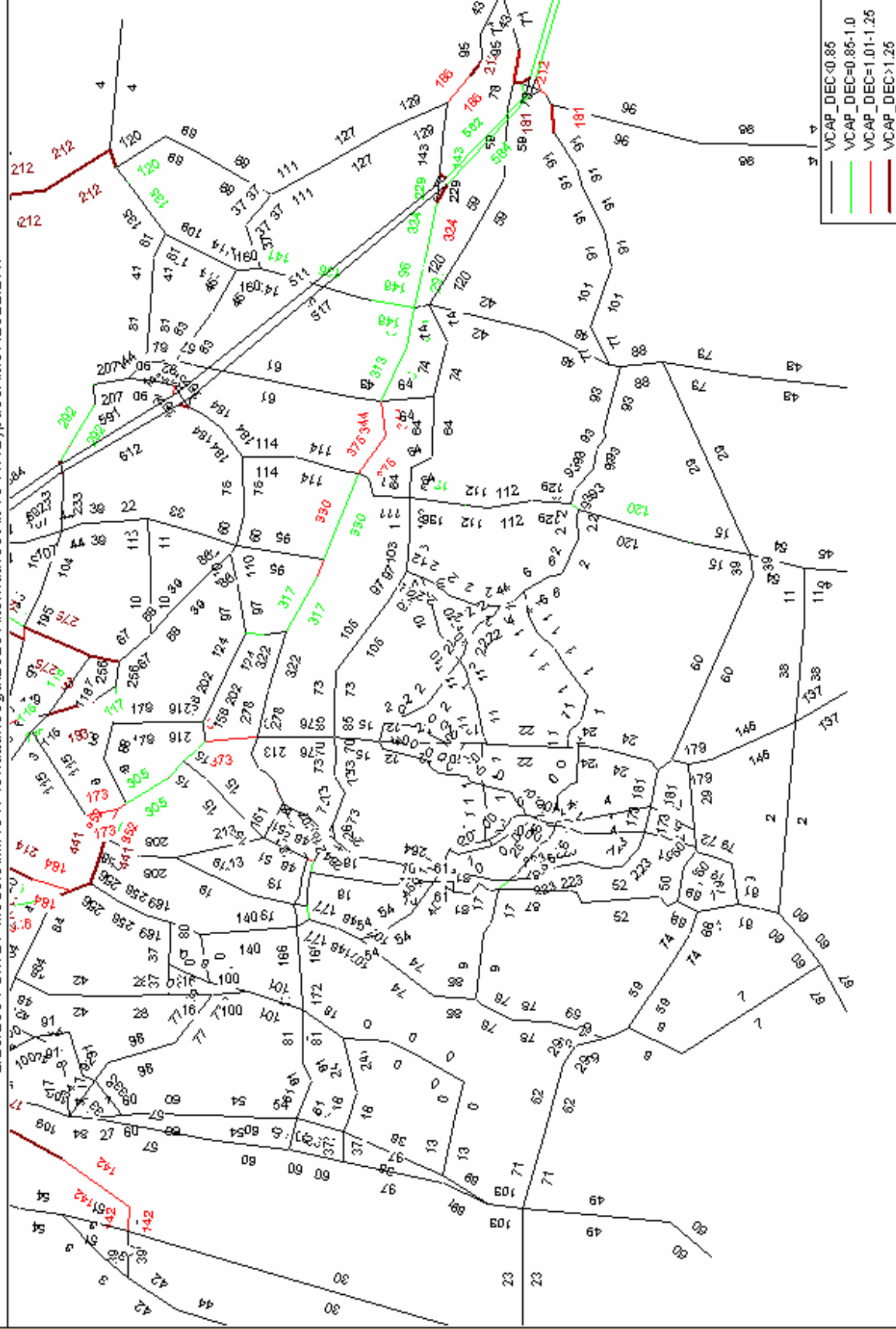


CCNMP Transportation Study

2025 US 27 Alternate Bypass Alternative (Extension from Battlefield Pkwy. to LaFayette Rd./Chickamauga Ave.)

Volume-to-Capacity Ratio Bandwidth with Total Volumes (in 100s)

2/26/2004 S:\TDF Models\MINUTP\Chattanooga\2025 Alternatives\Alt 15-NW Bypass\AltCH2522.DAT

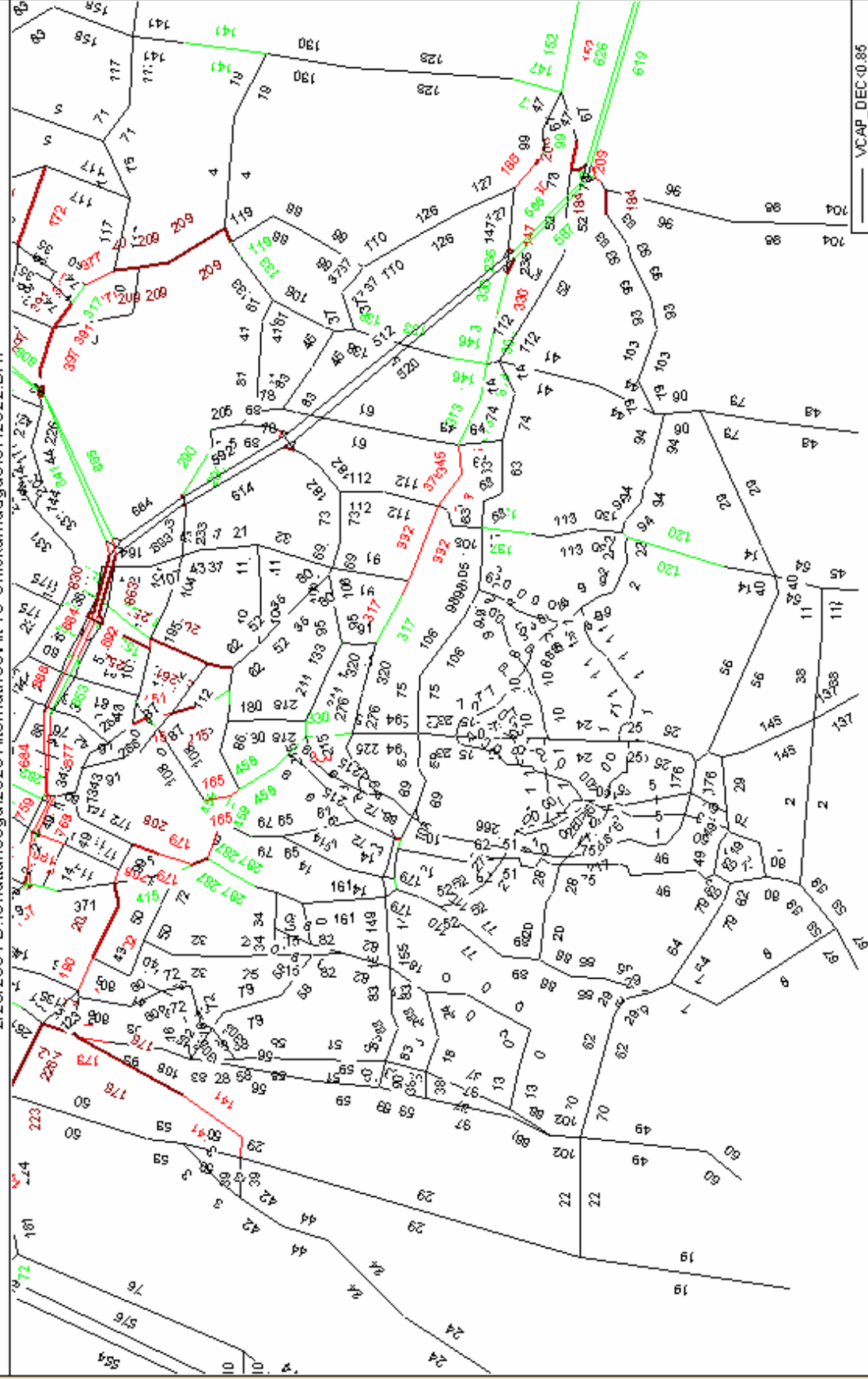


CCNMP Transportation Study

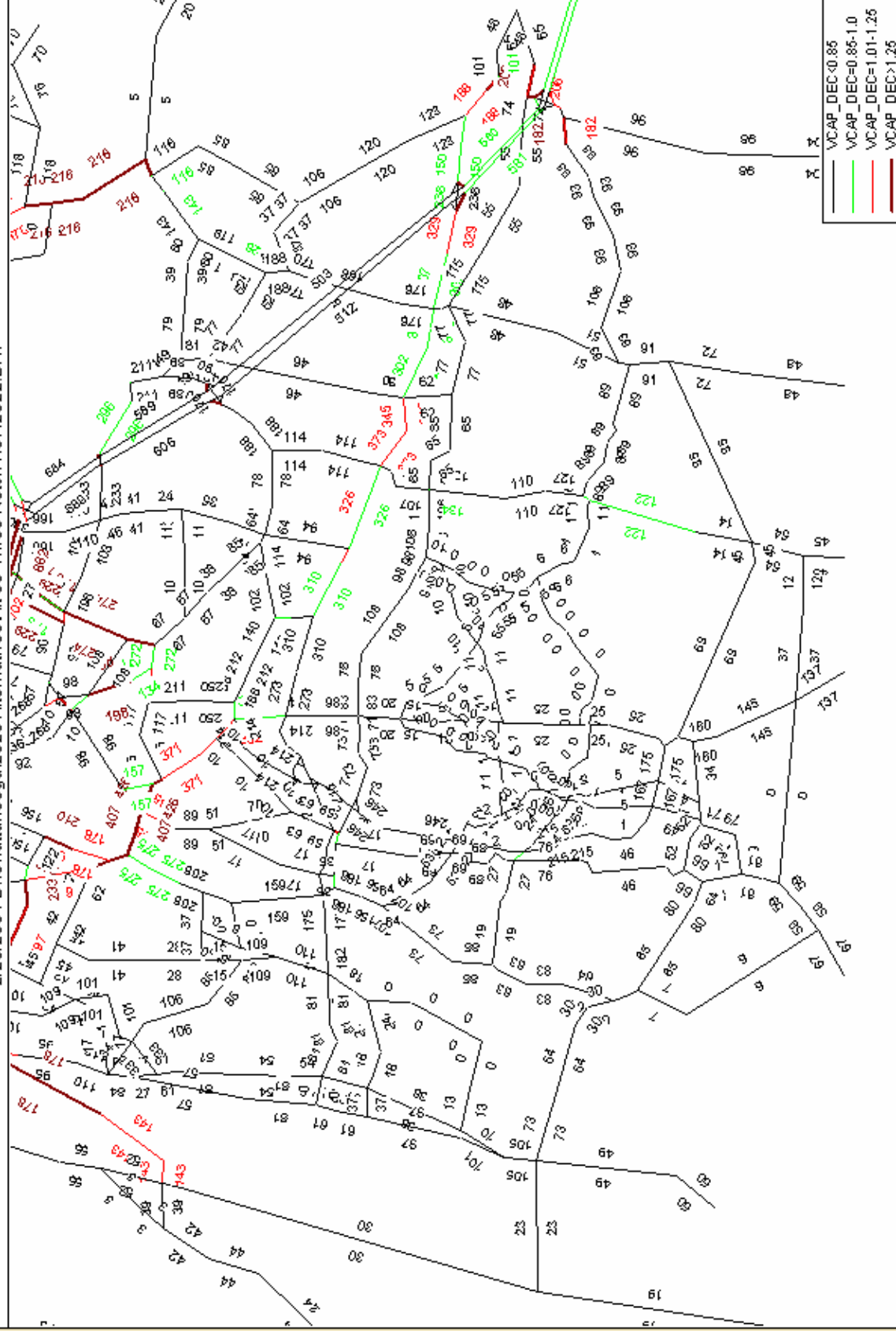
2025 Widening of LaFayette Road/Chickamauga Avenue/Rossville Boulevard to 6 Lanes Alternative

Volume-to-Capacity Ratio Bandwidth with Total Volumes (in 100s)

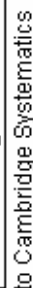
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CCINMP Transportation Study
2025 Widening of Three Notch Road to 4 Lanes Alternative
Volume-to-Capacity Ratio by Bandwidth with Total Volumes (in 100s)
2/26/2004 D:\Chattanooga\2025 Alternatives\Alt 03-Three Notch\CH2522.DAT



2/26/2004 D:\Chattanooga\2025 Alternatives\Alt 14-Close Eastern Bypass\CH2522.DAT

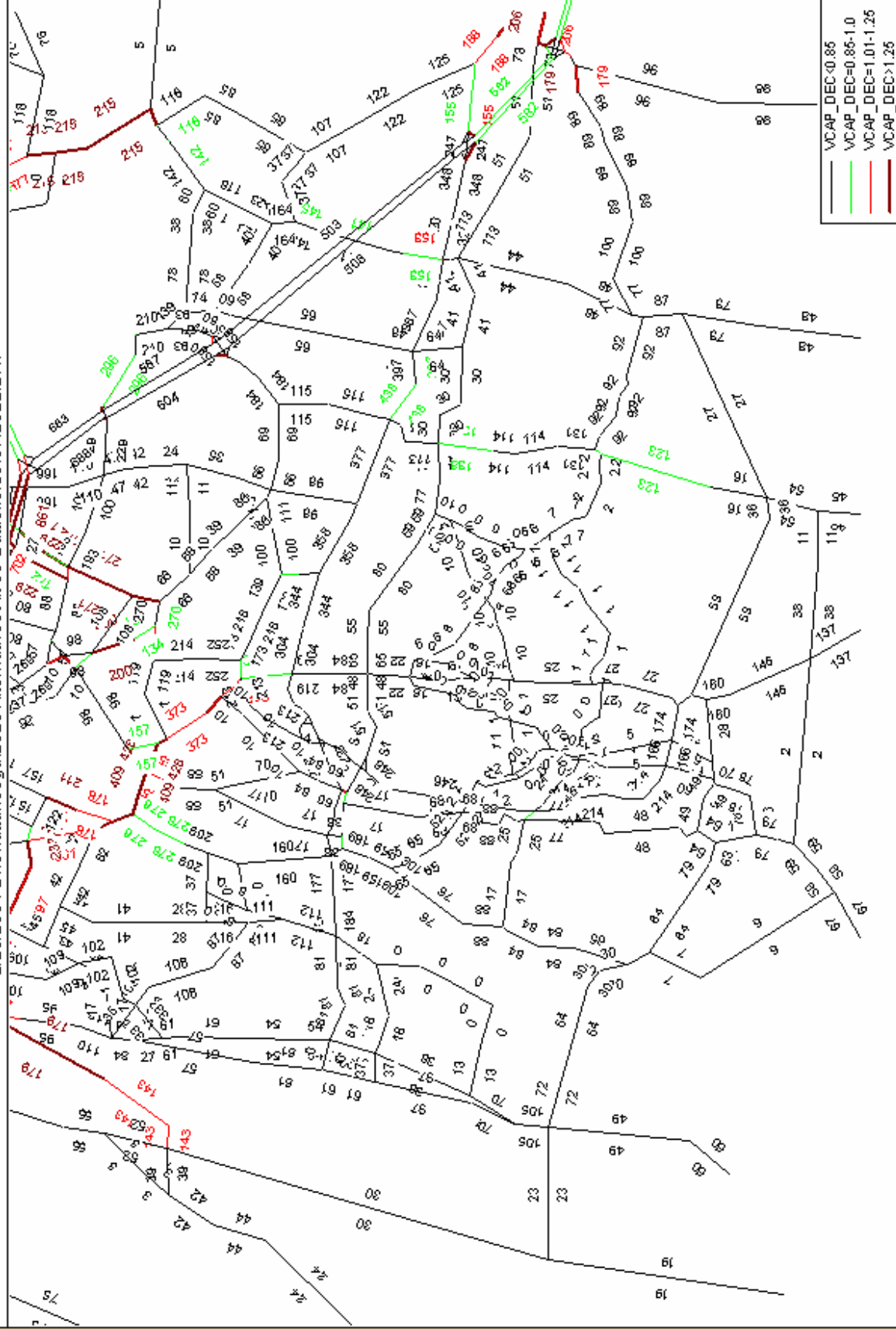


CCNMP Transportation Study

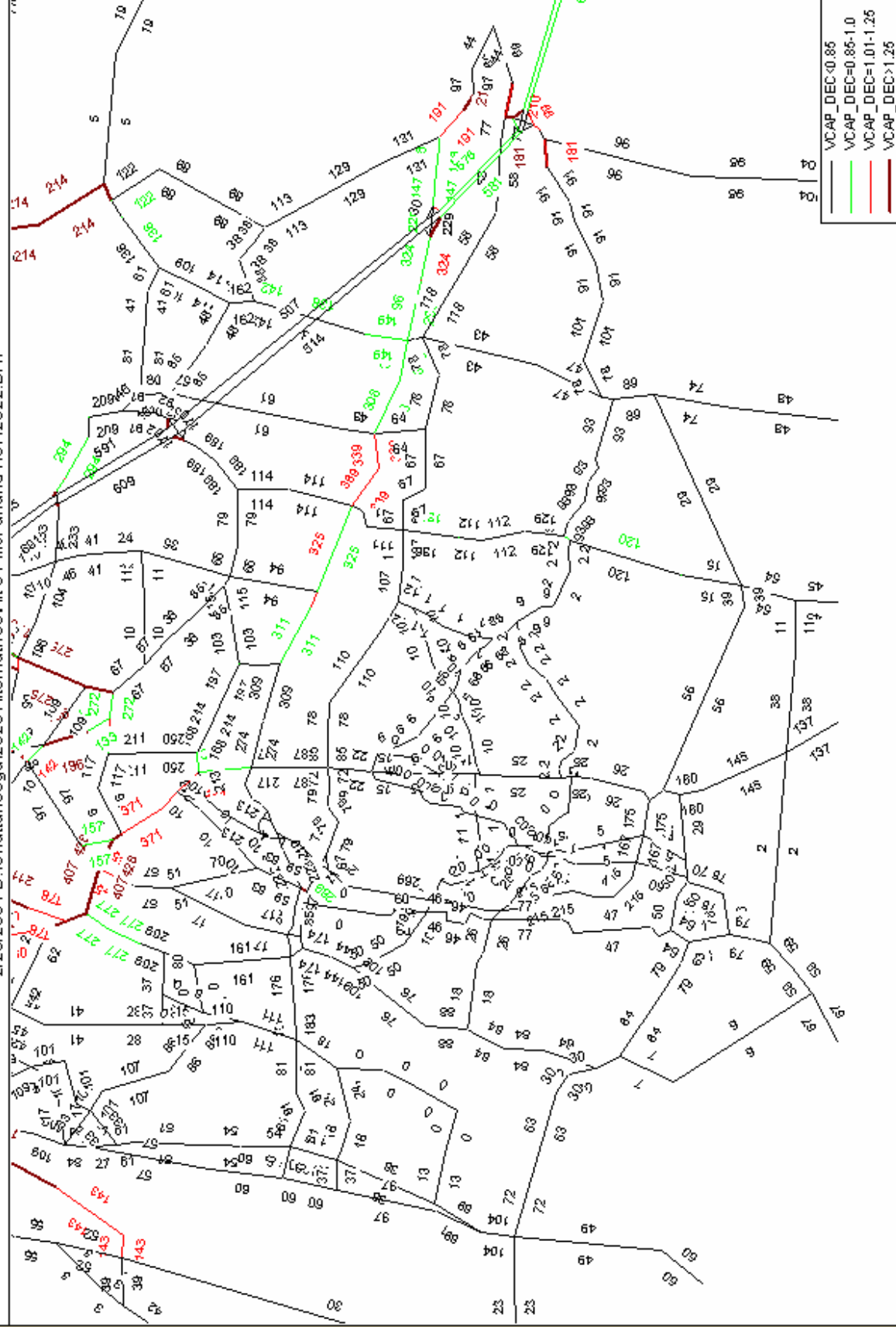
2025 Widening of Battlefield Parkway to 6 Lanes Alternative

Volume-to-Capacity Ratio Bandwidth with Total Volumes (in 100s)

2/26/2004 D:\Chattanooga\2025 Alternatives\Alt 05-Battlefield6\CH2522.DAT



CCNMP Transportation Study
2025 McFarland Gap as 4 Total Lanes Alternative
Volume-to-Capacity Ratio Bandwidth with Total Volumes (in 100s)
2/26/2004 D:\Chattanooga\2025 Alternatives\Alt 04-McFarland\4ICH2522.DAT

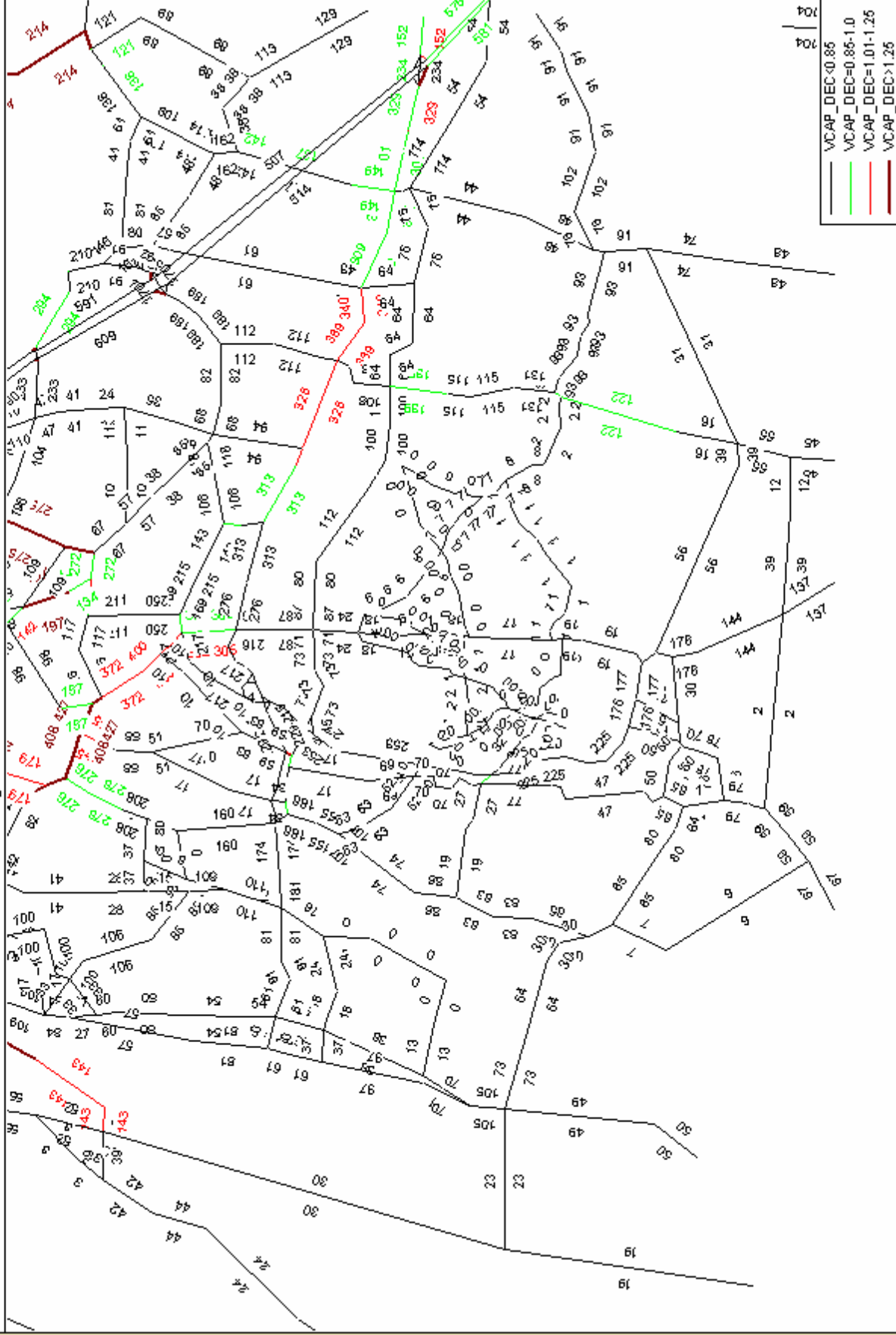


2/26/2004 D:\Chattanooga\2025 Alternatives\Alt 11-RevLoop\CH2522.DAT



2025 Gate Closures at Jay's Mill, Wilder, Osburn, Long Hollow, & Lytle Alternative

2/26/2004 D:\Chattanooga\2025 Alternatives\Alt 12-Gate Closures\CH2522.DAT

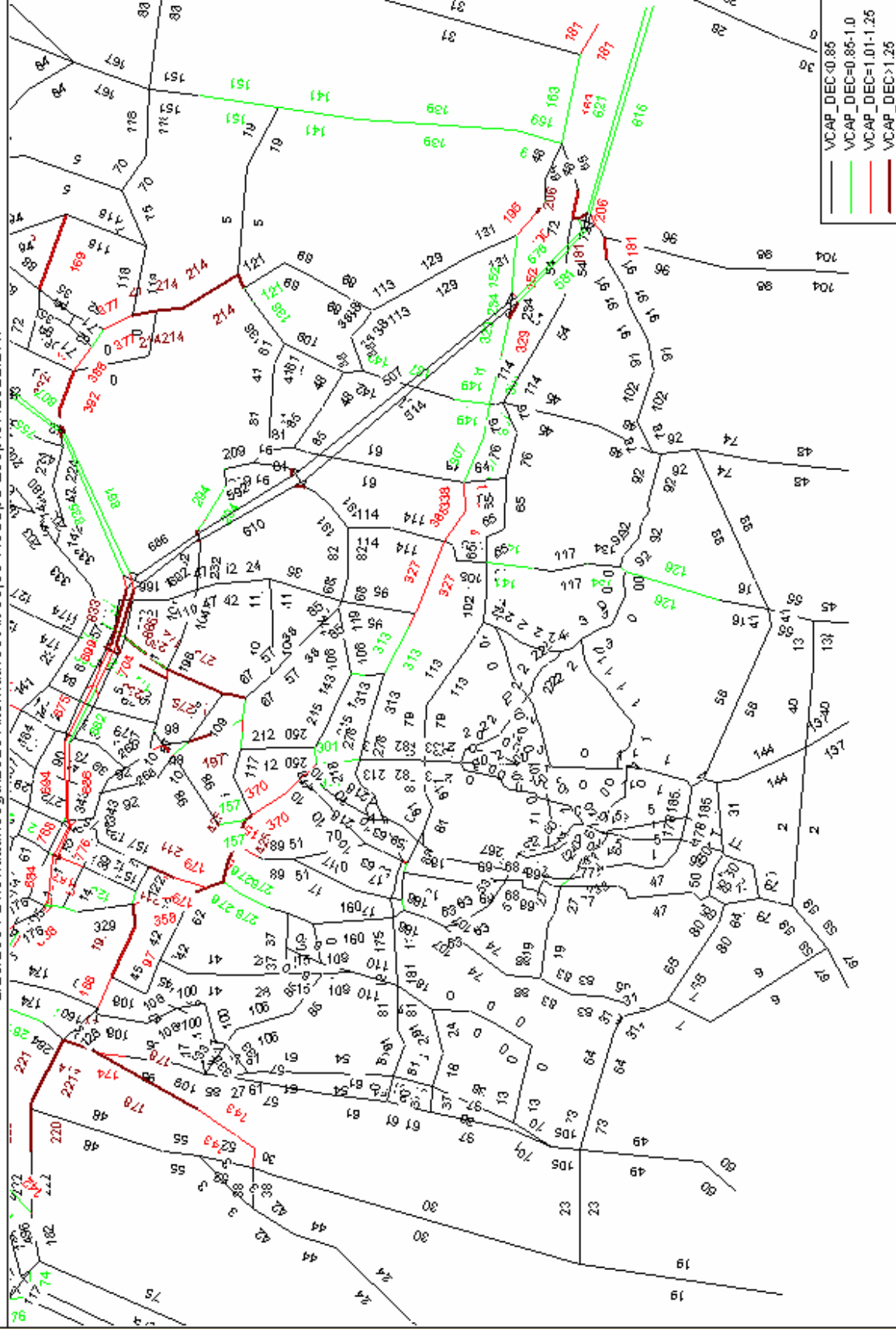


CCNMP Transportation Study

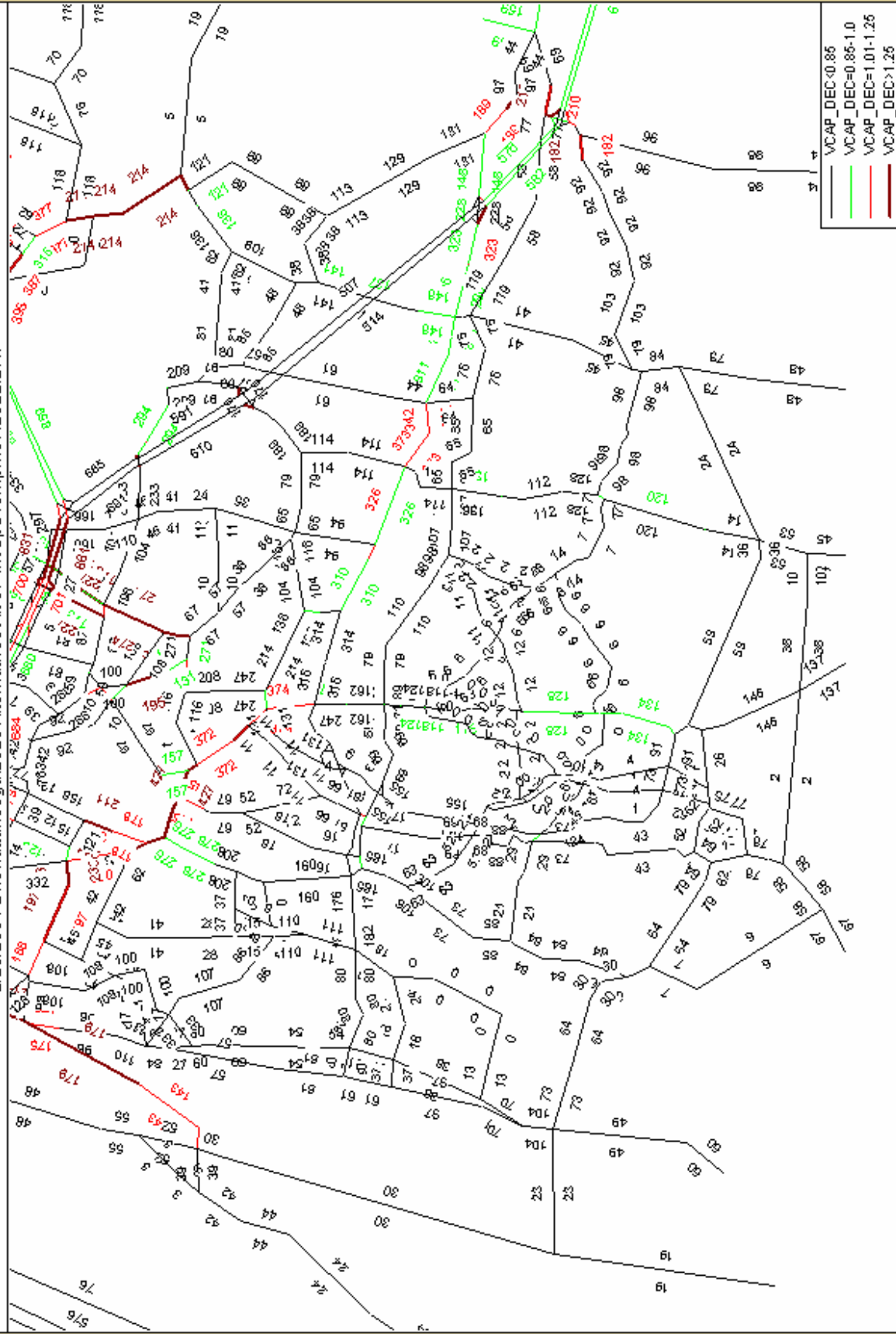
2025 Reduced Lafayette Road Speed to 20 mph and Included One-Way Loop Alternative

Volume-to-Capacity Ratio Bandwidth with Total Volumes (in 100s)

2/26/2004 D:\Chattanooga\2025 Alternatives\Alt 06.08-RedSpd-Loop\CH2522.DAT



CCNMP Transportation Study
2025 Increased LaFayette Road Speed to 40 mph Alternative
Total Volumes and Volume-to-Capacity Ratios
2/26/2004 D:\Chattanooga\2025 Alternatives\Alt 07-IncSpd40mph\CH2522.DAT



CCINMP Transportation Study
2025 Reduction of Speeds on McFarland Gap/Reed's Bridge Road Alternative
Volume-to-Capacity Ratio Bandwidth with Total Volumes (in 1000s)
2/26/2004 D:\Chattanooga\2025 Alternatives\Alt 13-McFarland-RB_FTCH2522.DAT

